

PETERSEN'S PHOTOGRAPHIC MAGAZINE

Photographic

Petersen's

MARCH, 1976

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Photographic Magazine

HOW-TO:

**USE A POCKET
CALCULATOR IN
THE DARKROOM**

**LET THE LENS
DIRECT THE
SCENE**

**PREPARE A
WINNING
PORTFOLIO**

PLUS:

**COLOR PRINTING
PART III:
KODAK'S
COLOR SYSTEM**



MARCH 1976

A true center-weighted meter system can function accurately, virtually without supervision.



You can experience it in a Nikkormat FT2. Since the introduction of through-the-lens metering, every camera maker has claimed surpassing accuracy for his particular system. There are averaging systems which require frequent user compensation. And spot meters which demand computations from the photographer. Bottom-weighted and contrast-dependent systems which work differently when the camera is vertical than when it's horizontal. And even a design which meters different areas, according to which lens is in use!

And then there is Nikon center-weighted metering. Professionally regarded as the most accurate in the widest range of lighting situations. All Nikon and Nikkormat cameras have it. And, they are *truly center weighted*. The circle in the middle of the finder screen indicates the area in which most of the meter sensitivity is concentrated (the remaining sensitivity is spread over the rest of the screen). In an almost limitless range of lighting situations, the meter requires no compensation of any kind from you.

Despite its moderate cost, the FT2 has inherited many other qualities from the Nikon F2, from the fine workmanship to the more than 50 Nikkor lenses.

The Nikon School of Photography is an ideal place to learn more about photography, in 11 fascinating hours! Ask your dealer. Or write for Lit/Pak 30.

NEW! THE NIKON OWNER'S COURSE. Exciting 4-hour course in camera basics, only \$10. FREE if you buy a new Nikon or Nikkormat camera in 1976. To qualify, see your authorized Nikon dealer for details and conditions.

Nikon Inc., Garden City, N.Y. 11530. Subsid. of Ehrenreich Photo-Optical Indus. Inc. (In Canada: Anglophoto Ltd., P.Q.)

Nikkormat FT2

It brings out the Nikon in you

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COVER

This month's stunning cover photo was taken by Frank Bez to illustrate his feature article, "Use Lenses For Personal Expression," beginning

on page 66. The butterfly was photographed with a 500mm f/8 Nikkor mirror lens, using a Nikon F2 loaded with English Kodachrome-X Film. Exposure was 1/30 at f/8; camera and lens were sand-bagged for stability.



ON THE SCENE

THE EDITORS



BRINKMAN



BADGER



CLAASSEN



BEZ



BUCHANAN

A CONSTELLATION OF HEAVENLY HINTS

Although most of us know March as the third month in our Gregorian calendar, those concerned with more celestial matters mark the new month, not in calendar days, but by the time required by the moon to revolve, once more, around the Earth. Stargazers and soothsayers point out that each such orbit causes new configurations of our planets, with resulting significance for people's body rhythms and our horoscopes. And you thought you bought this month's PhotoGraphic to read about photography! Well, you won't be disappointed . . .

This issue's first stellar contribution is "Vacation Snapshotting," a simple, straightforward look at what it takes to document a weekend jaunt or long-dreamed-about holiday. **Grover Brinkman** brings all the insights gleaned from years of shutterbugging to provide a good review of basic camera techniques for all of us planning excursions this spring and summer . . .

Always a star on PhotoGraphic's horizon, East Coast Editor **Steve Rosenbaum** continues his enlightening series with "Color Printing, Part III," an in-depth guide to the Kodak color system. Rosenbaum shows us how to use a tool too-often overlooked in color printing—color proof sheets. He's determined to make expert color printers out of all of us yet . . .

Contributor **Curtis Badger** has a couple of tricks up his sleeve this month. In "Darkroom Zoom" he tells how to give your photographs a dazzling zoom effect *without* an expensive zoom lens or other camera accessory . . .

Another novel darkroom technique that's sure to save much time and improve precision can be found in "Calculator in the Darkroom," by **Claassen and Johnson**. At last—a brilliant photographic use for those little pocket wonders that help simplify mathematics in our computer age . . .

While we're on the subject of math and science, why leave out the alphabet? We wouldn't think of it, especially since Contributing Editor **Kalton C. Lahue** has come up with an entertaining article, "The ABC's of Photographic History," an enjoyable and candid glimpse into photography's colorful past . . .

Frank Bez expounds on one of his favorite philosophies—to let your lens direct the scene—in our interview with him, "Use Lenses for Personal Expression." . . .

We're very happy to present **Roger Buchanan's** splendid portfolio from the Southwest, "Visions of an American Landscape." Buchanan has spent a great deal of time photographing American Indians and their ancestral homeland, and his work is truly worthy of this subject . . .

Rounding out this month's constellation of photographic luminaries is Feature Editor **David Brooks**, who shows how to make a professional portfolio to showcase your best work in "Portfolio: Planning, Preparation, Presentation." . . .

That's PhotoGraphic's galaxy of stars this month. Our astrologer predicts cosmic good fortune. We think, at the very least, you'll be inspired and stimulated by our March issue . . .

COMING NEXT MONTH:

UNICOLOR COLOR PRINT SYSTEM, PART IV—a thorough analysis completing our series on color printing.

SHOOTING WATER—Photograph water for spectacular effects.

ALL ABOUT FLASH BRACKETS—Everything you've always wanted to know about these remarkable gadgets.

DARKROOM LIGHTING—The latest technical information to get you out of the dark.

PLUS:

MOVIE MAKING—All about how to film and edit single system super 8 sound.

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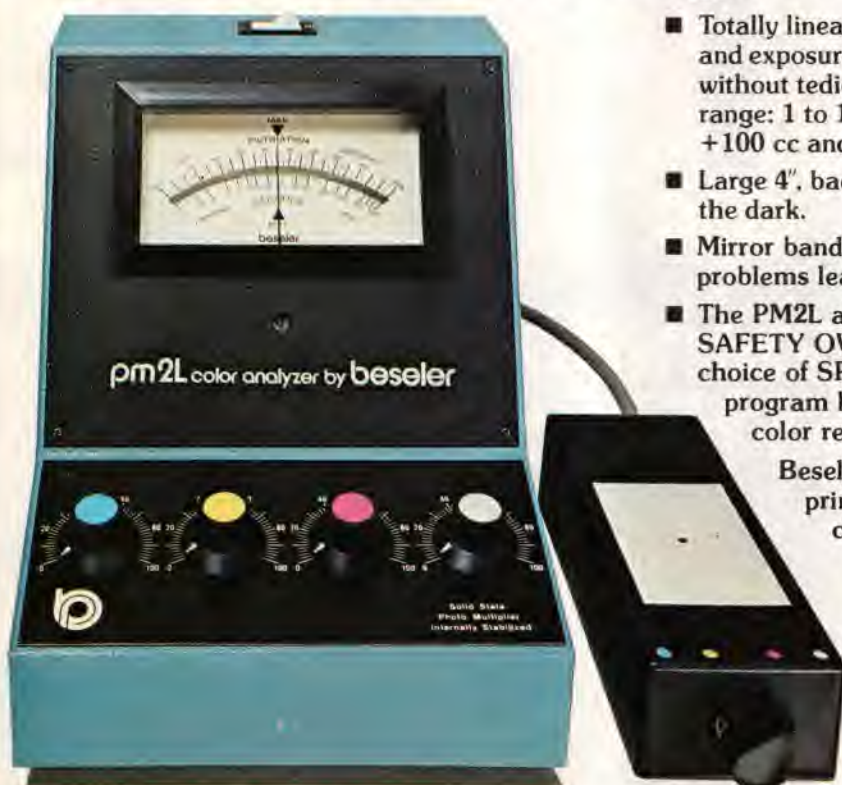
For \$149.95, You'll Get A Lot Of First and Only's.



New Beseler PM1 Color Analyzer

- First analyzer for the price with photo multiplier light detector for greater sensitivity and accuracy.
- First analyzer for the price with compact one-piece design—light detector built-in for safe, convenient operation.
- First analyzer for the price with solid state circuitry, internal voltage stabilization, and full U. L. approval.
- First analyzer for the price with easy-to-read, back-illuminated meter.
- Only analyzer for the price with fully automatic SAFETY OVERLOAD CIRCUITRY—protects the light detector from damage or loss of programming accuracy by accidental exposure to white light.
- Only analyzer for the price equipped to take either SPOT or INTEGRATED READINGS.
- Only analyzer for the price with full instructions for use in color negative printing, color reversal printing, or black-and-white printing.
- Only analyzer for the price with calibrated program knobs to recreate an infinite number of color programs.

For \$229.95, You'll Get A Few More Big Advantages.



New Beseler PM2L Color Analyzer

- Totally linear, factory-calibrated meter. Color filtration and exposure readings are taken directly from the meter without tedious charts or equations. Exposure scale range: 1 to 100 seconds. Filtration scale range: 0 to +100 cc and 0 to -100 cc filter change.
- Large 4", back-illuminated meter. Super-easy to read in the dark.
- Mirror band on meter helps to avoid eye parallax problems leading to inaccurate readings.
- The PM2L also features photo multiplier sensitivity, SAFETY OVERLOAD CIRCUITRY, full U. L. approval, choice of SPOT or INTEGRATED readings, calibrated program knobs, and instructions for color negative, color reversal, and black-and-white printing.

Beseler color analyzers simplify and speed color printing by eliminating wasted time, paper, and chemicals on repeated test prints. You can make a perfect print on the first try every time.

See the newest breakthrough in color analyzer design at your Beseler dealer.

For a free brochure on the PM1 and PM2L, write to us:

Beseler Photo Marketing Co., Inc.
8 Fernwood Road, Florham Park, N. J. 07932
Dept. PM1-PE

Beseler PM1 & PM2L...#1 in the dark.

Announcing...Something

Two brand new programs for everyone from accomplished

NIKON OWNERS COURSE

**A 4-hour orientation course for
new Nikon and Nikkormat owners.**



for everyone, from Nikon!

photographer to new Nikon owner. Beginning with....

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The purchase of a Nikon or Nikkormat camera is a major event in any serious photographer's life. Often, it's the fulfillment of a dream, the entrance into a whole new realm of photographic possibility. We feel a responsibility to help Nikon and Nikkormat owners realize all the potential that is there, waiting. So now, exclusively for the Nikon family, we are pleased to offer an orientation course dedicated to the cameras themselves, a course of particular value to **new** camera owners... **The Nikon Owner's Course.** It delves into all the controls on your camera, and how to get the most out of each. It explores some potentials which may be new to you, even if you've been taking pictures for years.

An advanced multi-media presentation, liberally illustrated with exciting and effective photography, the course is filled with useful information about your camera. Exposure control receives heavy emphasis... you'll be ready to meter accurately in almost any imaginable lighting, when this section is completed! You learn how to use shutter speeds to achieve the effects you want. The differences between various types of lenses, what effect varying lens apertures has, the perspective magic that lenses put at your command. You'll find the best ways to hold and handle your camera, even how to clean and maintain camera and lenses! What's more, when you attend the course you will receive a useful Notebook/Workbook filled with valuable information to help you grow in photography.

Admission... only \$10

To attend the Nikon Owner's Course, you must purchase your admission ticket by mail directly from Nikon, Inc. Send \$10 with a completed Nikon Owner's Course Registration Form which is available at authorized Nikon dealers.

Free... with a camera purchase

If you buy a new Nikon or Nikkormat camera anytime between January 1, 1976 and December 31, 1976, you can get your \$10 admission ticket FREE. Instead of sending \$10, just enclose a copy of the bill-of-sale from the camera you purchased, along with your Nikon Owner's Course Registration Form. This free offer is made only in the United States* on retail sales of new Nikon and Nikkormat cameras imported and sold by Nikon, Inc.

The Nikon Owner's Course will visit over 150 cities around the country. It will be four hours of concentrated instruction, lasting from 6:30 to 10:30 on a weekday evening. Your Nikon dealer has schedules, details, locations and registration forms. We suggest you bring your Nikon or Nikkormat camera when you attend the Nikon Owner's Course.

"Graduate" to Nikon School

The Nikon Owner's Course is the perfect prelude to The Nikon School of Photography. This famous 11-hour school, now in its sixth year, takes your new-found camera-handling skills and puts them to work making good photographs. Practically any imaginable photographic principle and technique is clearly explained and illustrated by highly qualified photography instructors. From basic essentials such as composition to sophisticated techniques like multiple exposures, you'll come away with knowledge and inspiration to make your own photographs. The Nikon School is open to everyone, at just \$30.

Ask your dealer for travel schedules and locations for The Nikon Owner's Course and The Nikon School... or write for Lit/Pak 10.

Nikon Inc., Garden City, N.Y. 11530.

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*Also available in Canada from Anglophoto Ltd., P.Q.



NIKON RESPONSE RECOG

introducing a new program of image evaluation and

We at Nikon are keenly aware of the growing numbers of people who are serious about photography. People who work constantly to improve their images. People who are the heart and soul of the excitement that is photography today.



If you are such a person, we'd like to see your best work. To share your photographic accomplishments with you. What's more, we'd like to reward the very best of the photographs we see with valuable prizes. That is the essence of a new, two-part Nikon program designed to help photographers and photography. We call it Response & Recognition, and it is open to any amateur 35mm photographer in the United States.* **Response**—This is the first part of our new program. We've established 6 picture categories and we invite you to send us your best photo or slide in as many of the categories as you

like. We will evaluate your work and advise you if it achieves one of four honor classifications. **Recognition**—For the best of the photographs submitted, there will be a competition for valuable Nikon equipment prizes, plus the opportunity to appear in Nikon World magazine and the Nikon House Gallery!

\$1.50 Registration Fee There is a nominal \$1.50 Registration Fee for each official Nikon Entry Kit. The fee covers handling and return postage. The kit (which must be used for each entry) includes an envelope mailer, an entry card, a print stiffener and a numbered record form. You may submit a 35mm slide, or unmounted 8x10 print made



from a 35mm negative or slide, color or black and white. The Entry Kit, as well as detailed rules and regulations will be available at authorized Nikon dealers everywhere by mid-February.

The categories and dates:

1. GLAMOUR PHOTOGRAPHY
April 1-May 31, 1976

2. NATURE PHOTOGRAPHY
June 1-July 31, 1976

3. SPORTS PHOTOGRAPHY
August 1-Sept. 30, 1976

4. TRAVEL PHOTOGRAPHY
October 1-Nov. 30, 1976

5. STILL LIFE PHOTOGRAPHY
Dec. 1, 1976-Jan. 31, 1977

6. PICTORIAL PHOTOGRAPHY
Feb. 1-March 31, 1977

You can enter as many categories as you like, but only one entry in each category, and only during the period specified above for each.

NISE & NITON

competition for a nation of 35mm photographers.

For everyone: RESPONSE

Soon after the category you enter closes your photograph will be evaluated by respected faculty members of The Nikon School of Photography. They will judge it equally for subject interest, composition, lighting, technique and visual impact. Based upon these criteria, your work may qualify for one of four classifications of honor: (1) Pictorial Excellence, the highest; (2) Distinction; (3) Merit and (4) Recognition. The standards are high, so it will be an honor indeed to receive any one of these commendations. You will be notified when your photo is returned.

For the very best: RECOGNITION

Those entries which achieve the top honor classification — Pictorial Excellence — automatically become eligible for the second phase of Nikon R&R. This is a competition, in which

your entry is judged against others within the category — **and you may win one of 250 valuable photographic prizes!**

First place, in each category, will receive a "dream" Nikon F2 outfit with lenses and accessories tailored to the category. The winner of the Sports category, for example, will receive a Nikon F2 Photomic with Motor Drive, plus 28mm f3.5, 50mm f1.4 and 200mm f4 Auto-Nikkor lenses, Prism Reflex Sports Finder, Nikon FB-13 compartment case and Nikon 9x35 Binoculars! And there are still more camera, lens and

accessory prizes for second and third place winners...but even that isn't all. There are a total of 43 prizes in each category, including Nikon School Gift Certificates, and the best selling Nikon Image Book!

The top 3 winners in each category will enjoy still further distinction: publication of their winning entries in **Nikon World** magazine, one of the most widely-circulated photographic magazines in America. And exhibition at the **Nikon House**



Gallery in New York City! All in all, it's the biggest, most all-encompassing program ever offered the amateur photographers of America...choose



your categories and plan to enter now! It's Response, it's Recognition, it's from Nikon, of course.

Your authorized Nikon dealer has official Nikon R&R Entry Kits and all the details. The program is void where prohibited, taxed or restricted by law. All federal, state and local taxes are the responsibility of the winners.



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OTHER VOICES

PRICE CHANGE

You were kind enough to feature a write-up of the Hasselblad tele-converter of our client Aetna Optix, Inc. (see "Product Proof Sheet," December, 1975 issue). Unfortunately, the price of the item was incorrectly listed as \$145 instead of \$245.

Unfortunately, too, the responses have been very good from both consumers and dealers alike, who want to buy this item at this low price.

I would appreciate very much if you could correct this matter for your readers, indicating the correct selling price for the Hasselblad tele-converter.

Thank you for your cooperation and attention to this matter.

Henry Tillinger
Direct Promotions, Inc.
New York, New York

INVERSE SQUARE QUALIFICATION

I should like to clarify a point in my article, "Build a Super-Macro Camera" (October, 1975 issue), which could possibly be construed as an error.

I stated that to light subjects at 1:1 and greater ratios, the distance of the light source should be doubled and halved to bracket one f-stop. I realize that according to the Inverse Square Law, halving the distance should increase the light on the subject two f-stops and vice versa.

My own experience with Kodak Kodachrome Films in this and similar systems indicates that the Inverse Square Law tends to break down at extreme near and far distances. In this case, both the strobe and lens are extremely close to the subject, and proper exposure determination requires extremely sophisticated equipment or a little experience and a lot of bracketing—which was what I was attempting to convey rather than an education on the Inverse Square Law.

I hope this point did not confuse my readers.

Bob Golden
Ventura, California

OPINIONS/OPTIONS/OPTICIANS

I read "Guide Lines" in the November, 1975 issue with great interest and could very well understand Mr. Farber's frustration when he discovered that he needed reading glasses. I went through the same experience.

After considering different avenues to solve my problem, I decided to invest in an "adjustable critical focuser." The result was poor, not to say zero, and

still my reading glasses remain very much a bother.

I'm waiting for camera manufacturers to come out with bigger finders on their cameras with adjustable diopters—like the ones found on movie cameras. Or is this asking too much?

Edward Crooy
Inglewood, California

I enjoyed the column "Now You See It, Now You Don't" ("Guide Lines," November, 1975 issue). Since I spend some amount of time behind a camera and almost an equal amount of time wearing glasses, I can appreciate your problem.

There are, fortunately, some solutions. The best solution that I've found is contact lenses. Bifocal contacts are now being fitted with about 85-percent success. These should solve both the restricted viewfinder and the near blur problems.

Another possibility is to have your optometrist fit the camera's eyepiece with your prescription, rather than have the camera store do it—now I know why my suggestions for eyepiece powers to my patients never worked! Explain the problem to your optometrist and see what he comes up with.

Thos. H. Smith, O.D.
Fergus Falls, Minnesota

"Now You See It, Now You Don't," (November, 1975 issue) was a delightful article. Visual acuity comes in infinite degrees, and oculists, optometrists and opticians readily examine, prescribe and make glasses to readily correct these many degrees of visual deficiencies.

But those of us with lesser visual acuity shouldn't place any more problems on the camera manufacturers. They already provide us with accessory corrective lenses from +2.5 to -5, which can be easily inserted in an eyepiece adapter.

Wearers of glasses, even if they knew the diopter number of the viewfinder lens, couldn't buy the proper corrective diopter without first ascertaining from their oculist or optometrist the corrective diopter needed to go with their viewfinder lens.

When I was examined for glasses, I took my camera along. When the doctor knew what correction was needed for my eyes, it was a simple matter to focus my camera on the eyechart with the prototype glasses, then remove the "glasses." Now the doctor placed different diopter correction lenses between my eye and viewfinder until one of them allowed me to see the eyechart in correct focus. Now with a +2 diopter attached to my camera viewfinder, I can once again bring objects into sharp focus without my glasses.

Frank Bergeson
Denver, Colorado

(Continued on page 10)

Here's how the
Konica Autoreflex
photos on the opposite
page were shot...automatic
and un-automatic.

SOMETIMES YOU NEED AN AUTOMATIC CAMERA
YOU CAN MANUALLY DISAGREE WITH.



KONICA AUTOREFLEX: Automatic and un-automatic.

Frame	Hexanon Lens	Shutter	Aperture
1	100mm f/2.8	1/125	AE
2	50mm f/1.4	1/125	AE
3	50mm f/1.4	1/60	AE
4	28mm f/1.8	1/60	AE
5	35-100mm f/2.8	1/60	AE
6	35-100mm f/2.8	1/250	AE
7	200mm f/3.5	1/250	AE
8	200mm f/3.5	1/250	AE
9	135mm f/2.5	1/125	AE
10	24mm f/2.8	1/250	AE
11	24mm f/2.8	1/125	AE
12	200mm f/3.5	1/125	AE
13	35-100mm f/2.8	1/125	AE
14	35-100mm f/2.8	1/250	1/4
15	35-100mm f/2.8	1/250	1/4
16	35-100mm f/2.8	1/60	AE
17	35-100mm f/2.8	1/60	AE
18	35-100mm f/2.8	1/125	AE
19	300mm f/4.5	1/125	AE
20	35-100mm f/2.8	1/60	1/5.6
21	400mm f/4.5	1/125	1/5.6
22	35-100mm f/2.8	1/125	AE
23	35-100mm f/2.8	1/125	AE
24	35-100mm f/2.8	1/30	1/4
25	35-100mm f/2.8	1/30	1/4
26	21mm f/4	1/125	AE
27	200mm f/3.5	1/60	1/5.6
28	35-100mm f/2.8	1/125	1/8 Flash
29	35-100mm f/2.8	1/125	1/8 Flash
30	28mm f/1.8	1/8	1/3.5
31	400mm f/4.5	12 sec	1/11
32	35-100mm f/2.8	1/60	1/4
33	200mm f/3.5	1/60	1/8
34	35-100mm f/2.8	1/125	AE
35	21mm f/4	1/60	AE
36	35-100mm f/2.8	1/125	AE

**KONICA
AUTOREFLEX:**
Automatic and un-automatic.
The choice is yours.

SOMETIMES YOU NEED AN AUTOMATIC CAMERA YOU CAN MANUALLY DISAGREE WITH.

There are times when a "perfect" exposure is all wrong for what you have in mind. But how is your automatic camera to know that?

Can you argue with it?

With the Konica Autoreflex, you can. And you always win automatically. (Or *un*-automatically.) Because Konica Autoreflex is really two cameras in one. It's both the finest automatic *and* manual camera you can own.

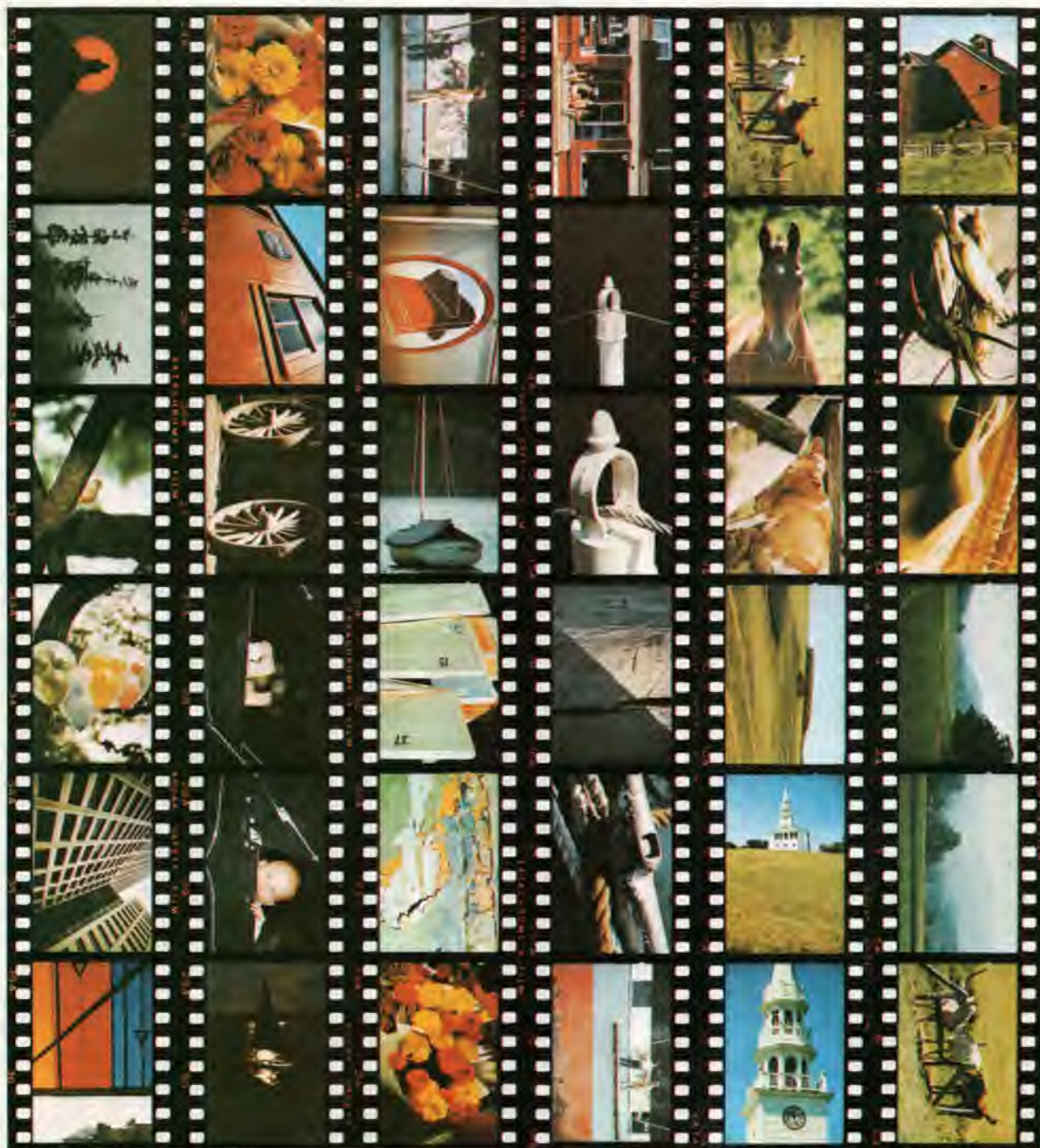
A fully automatic, professional camera when you need it to capture those shots that are here one split-second and gone the next.

A manual camera when you want it your way. For those special effects you see in your mind's eye. For tricky or deceptive light conditions. For deliberate overexposure or underexposure. Shots through extension tubes or close-up bellows. For all those situations that inspire your creative urge to do it differently.

When you want to concentrate on photography and not on manipulation, use the Konica Autoreflex.

When you want to manipulate the exposure the way you want, use the Konica Autoreflex. It's the best two cameras you can buy. Automatic *and* un-automatic. For a demonstration see your Konica dealer.

Or write for literature to: Konica Camera, Woodside, New York 11377.



See opposite page for exposure details.

KONICA AUTOREFLEX: Automatic and un-automatic.

OTHER VOICES

(Continued from page 8)

GEM COLLECTORS

To anyone out there in the possession of this invaluable jewel, I am in the market for business. I am referring to the June, 1974 issue of PhotoGraphic. I will buy or trade across with a November, 1974 issue. Please let me hear from you soon.

H. Bekezejian
770 Plumosa Avenue
Vista, California 92083

The November, 1975 issue was a masterpiece worth five times its cover price! It contained more useful information than other photography magazines present in six months. I am an avid nature photographer and was especially interested in John Hoffman's "Aviary in the Studio." I have never seen such beautiful bird photography in any publication. The accompanying article was informative and solved my problem of how to "shoot" birds in a natural setting.

PhotoGraphic stands out as a gem when compared to other photography magazines. Put my name on your list as a "lifetime" subscriber.

Bill White
Arleta, California

BOOK REVIEW

I discovered Petersen's How-To PhotoGraphic Library books at a local department store a few months ago. Since then, I have acquired most of them, and they are fantastic! As I was about to purchase a new zoom lens recently, I read through the book entitled, *Interchangeable Lenses*, by Kalton C. Lahue, and was able to make a better decision based on the information given in the Petersen book.

I also discovered the section on teleconverters and bought the 2X type. I used it with my 135mm telephoto lens, and the results were great.

Through a friend, I was made aware of PhotoGraphic. I bought the October, 1975 issue and found the "Blueprint: How to Construct Variable Contrast Lighting Equipment" very enlightening. I built it but made a slight modification. Instead of using the three-way adapter, I used a regular knob-switch-type, three-way adapter.

Thanks again for all of your help and count me as a new fan and avid reader of PhotoGraphic.

Manfred Bohmer
Clark, New Jersey



FINALLY!

Omega enlargers for people who thought they couldn't afford an Omega enlarger.

For those setting up their first darkroom, the question has always been "Should I start with a low-cost enlarger, or should I invest in an Omega?" It's no longer a decision you have to make. Now, virtually anyone can afford to start with an Omega, long considered the finest the industry has to offer.

It's the Omega System 600, for all film formats from Minox to 2 1/4" x 2 1/4". Product of the innovative engineering and know-how acquired by forty years of leadership in enlarger technology, the Omega System 600 offers unbelievably low cost, without compromising traditional Omega quality and performance capability. Dollar for dollar, this newest Omega system represents the very best buy anywhere.

Two basic enlarger models and a wide range of accessories make up the modular system. If your primary interest is black & white, choose the Omega B600 Condenser enlarger. Of course, it prints color as well, with its double optical glass condensers and built-in filter drawer. But if you'll print more color than black & white, the Chromega B600 Dichroic Enlarger puts you in business in a most professional way, using the very same Chromega B Dichroic lamphouse of costlier Omegas.

And if you're simply undecided, buy either one with the confidence that comes from knowing you have a fully modular system, which permits you to change from the condenser lamphouse to the dichroic, or vice versa, at any time. Whatever your needs, there's an Omega enlarger for you in the System 600.

Talk about an accessory system! A full range of Omega B precision dustless film carriers is available for all popular formats. (Many professionals consider the film carrier the most critical component of their enlarger system.) Plus a mounted slide carrier for reversal printing, and a universal glass carrier should you prefer it. Also, a swing-away under-the-lens filter holder, heat absorbing glass, supplementary condenser for miniature formats, portrait filter. And a complete line of analyzers, timers, easels and other darkroom accessories. All available as you need them.

See this most remarkable new enlarger system at your authorized Omega dealer. Omega Division, Berkey Marketing Companies, Inc., P.O. Box 1060, Woodside, New York 11377.



THE INCOMPARABLE NEW OMEGA SYSTEM 600



OMEGA 
The Greatest Name In Your Darkroom



Photography is a subtle mixture of diverse elements of content, composition and technique. Most photographers concentrate on one of these vital areas. Mike Laurance concentrates on content.

"My approach depends on the subject matter," he says. "With a specific subject—whether it is hard goods or a model—I want to make a photograph which shows it at its best, as the center of attraction. The subject must itself be the strongest facet of the photograph."

To accomplish this kind of subject domination in his photographs, Laurance leans heavily on the Canon wide-angle and super-wide-angle lenses. "I use the wide angles frequently because of their 'drawing' effect. When I work with a subject using a wide-angle lens, I work closely, so that the subject is more dominant, stylized and three-dimensional. The wide angles draw the viewer's eye directly into the picture, directly to the subject. They help me separate important content from irrelevant visual data."

His *normal* lens is the FD 24mm f/2.8 which, in his opinion, is "a truly remarkable lens." He feels that the two major virtues of the Canon wide- and super-wide-angle lenses are (aside from their resolution) their lack of distortion ("No one would pay me to turn beautiful women into gargoyles.") and their freedom from flare. "Their lack of flare is especially important to me, since I often work with back- or side-lighting, and the front element gets hit with plenty of light." And since he gets in so close to his subjects, the Canon Floating System of independently-moving rear elements provides him with the sharpness he *must* have to satisfy his clients. The Floating System is specifically

A world in wide-angle.



designed to reduce the problems caused by spherical aberration at close-up distances.

Laurance feels that while the "optics are the most important thing" in his camera system, the F-1's metering is also

vital in helping him get the kind of results he—and his clients—demand. "The accuracy and selectivity of the metering system (central area spot, measuring 12% of the finder area) in the F-1 is extremely important when using wide-angle and super-wide-angle lenses. I need to know that what I am metering is exactly what I *want* to meter. Because of this accuracy, I spend no undue time bracketing exposures—and my shooting sessions are more productive as a result."

The viewing system of the F-1 also helps Laurance when shooting with wide lenses. "Because I can see the whole screen image corner-to-corner, I don't worry about non-essential information getting into the picture, which can often happen using a lens that can 'pull' things into the composition which seem far enough away (to the naked eye) to be out of the frame."

Mike Laurance's technical and photographic expertise has been honed by years of experience as a professional photographer, press liaison, photographic journalist and magazine editor.

His technical articles on photography have appeared in most of the major photographic magazines in this country, and his photographic assignments have been many and varied.

Thanks to his years as a photographer deeply involved in both technical and aesthetic aspects of photography, Michael Laurance has had the opportunity to handle every major camera and system made. His choice is the Canon F-1 system. For him, "It provides answers to questions left unanswered by other systems. But most of all, its lenses are unquestionably the best I've ever used."

Canon® F-1



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GAMERA ON GAMPUS

ROBERT ROUTH

IS THE PHOTOGRAPHY CLASS AN ANACHRONISM?



□ "I think that photography should be integrated into a lot of different classes rather than isolated into a separate course," stated Van Deren Coke, historian, photographer, collector, and dynamic driving force behind the University of New Mexico's outstanding photography program. Coke, author of a most revealing book, *The Painter & the Photographer*, continued,

"I think that photography should be taught like language *should* be; if we would start at the third grade and teach history—or something of a classic nature—in Spanish, then we wouldn't have any trouble being bilingual.

"If we could just make the camera a part of the equipment along with erasers and protractors... It seems to me that it is only a question of getting the people in the schools to understand the relationship."

Coke prefaced his theory with examples. "Students could be asked to photograph cars produced in different years. They would become aware of them because they would have to look hard to find them, to record them, to see them in the negative and eventually to talk about them. They could see, then, the superfluous aspect of car design. They could see how, in the '50s, these fins were put on to evoke certain responses from the consumer. It seems to me this is a real aspect of history. Or if these kids were asked to go around the city and take pictures of the city itself, they would learn a lot about where they live. They would have pictures that they and their teachers could talk about and that they could take home and talk about. It's such a concrete thing, and I think that is where photography should be going.

"I think the 'art' aspect of photography will always be a small part of it, and that is well and good. But it is the using of photography as a means of communication as well as to learn about yourself and the world around you that is its major role. Students are already conditioned by TV and picture magazines to get information this way."

Coke pointed out that techniques in

photography are so elementary they can be taught to anybody very quickly. About half of the students accepted into the graduate photography program at the University of New Mexico have had no photography. However, they have demonstrated that they can think and write and examine problems. They can be taught all of the photography that they will need to know in the first six weeks of course work.

PHOTOGRAPHY, A HANDLE ON HISTORY



In view of Coke's background, I was interested in his attitude toward the necessity of teaching history. He commented, "I think that if you don't know history, you don't have a sense that you are important in the continuum of time and thought, and that is essential to self-acceptance. If it hadn't been for this continuum—this drop on drop of ideas and things that have come through the experiences of many people—we would not have one of the most important aspects of people... the capacity to have self-assurance, the awareness of the importance of the individual. People have to have models, and history provides the models. Concerning the history of photography, take Daguerre, for example, working out this incredible process. Here is a model that might lead a student to think, 'Maybe I can do something like that.' Photography for the student is a handle on history. He doesn't think of it in these terms, but here is a lot of material that will become—for that person or his friends—a future memory recall device that will set into motion all kinds of thoughts about the events of a past day. It seems to me that it is a most valuable way of coping with history for kids who don't want to get involved—who live only for today."

Coke placed much emphasis on photography as communication. "Ninety-nine percent of the students taking photography don't think they are seriously going to be professional photographers. Most of them take photography because it is a fascinating means of communication. I think that is the crux of the matter, and that is where the emphasis should be placed. Photography can

break down all kinds of class and language barriers. It is a means of identifying one's self in one's environment and within one's peer group.

"I think a great thing about photography is that it can be an art medium that can be used to talk about many aspects of life, a person's aspirations and philosophies. You can teach people very quickly how to make a picture image, and you can talk to them very quickly about the abstracting process of photography. After all, we look at the world through two eyes; the camera looks through one eye. What results is generally a black-and-white picture which is an abstraction of reality, so what you have is an abstraction made with one eye. That's pretty far from what we call reality, and therefore, it offers teacher and students an opportunity to explore the nature of reality—what we accept without much question as reality. The student may, without even being aware of it, use the camera for idiosyncratic problems—a process of identifying—just to get himself set in time and place. The very simple process of taking a picture, looking at the negative—which is an opposite abstraction of the original tone values and reduced in scale—makes us aware of shapes, because one doesn't immediately identify the subject in its negative form. So we can talk about the elements that go into any picture from an artistic standpoint or discuss whether it evokes an aesthetic response.

"Photography is so immediate that we can have the impulse and see the picture (Polaroid) and immediately talk about it, what it means and why we took it. I think people would reveal a great deal about themselves if they would think about what attracts them when they photograph and why they registered that thing in front of them rather than what is next to it or occurs 10 minutes later. There is such an incredible amount of information of a peripheral nature that comes into a photograph, to be looked at, talked about, challenged and perhaps even seen for the first time. This is because we take whatever attracted us initially, not thinking in terms of horizon lines or perimeters of the picture. We think in terms of the primary element that caused us to press the release of the camera at that time. I think that you can then go back and see a lot of other things that would then be not only history but might even help us to understand what's going on around us today. We are well equipped with rose-colored glasses to see things in a romantic way without really noticing what we see. But a photograph forces us, because it is still, it is limiting, it is small, to look at and see things in this abstraction which we never would see firsthand." □

Vivitar Series 1™ 70-210mm f3.5 automatic zoom lens with macro focusing.



This is the original automatic zoom lens for 35mm SLR cameras that also provides macro focusing capability. A unique mechanical design permits both zooming and focusing with the same control. Although this lens has a large maximum aperture, it is surprisingly short and light. These seemingly contradictory features were reconciled by the extremely sophisticated computer programs with which the designers worked. Most significant of all in practical picture taking situations is the high performance, accomplished by a novel approach to zoom optical design. This was another computer suggested departure from conventional zoom lens configuration. The quality of performance thus produced was previously unavailable in zoom lenses and compares favorably to the finest original equipment telephoto lenses.

The versatility of macro focusing combined with a three-to-one telephoto zoom make this a remarkable all-purpose lens; particularly for the photographer who does not care to compromise on performance. A specially anodized finish on the lens mount and deeply checkered vinyl non-slip grips provide for absolutely positive focusing. The Series 1 70-210mm zoom, like the other Series 1 lenses, cannot be manufactured quickly in large numbers. For this reason, current demand for this lens somewhat exceeds supply. Put in your order, be patient, and your Vivitar dealer will get you one as quickly as possible.

Optical Specifications

Construction:	15 elements 10 groups
Angle of view:	11-32 degrees
Minimum focus distance:	Normal: From focal plane—6'6½" Macro: From front of lens—3"
Maximum magnification in Macro:	1:2.2

Mechanical Specifications

Filter size:	67 millimeters
Weight:	31 ounces
Length:	6½ inches
Max. diameter:	3½ inches
F/number range:	f3.5-22 (EE coupled lenses to f16 only)

Vivitar Series 1 Program

In recent years, remarkable progress has been made in solving some of the classic problems of optical design. Intensive work in the field was spurred on by the demands of space exploration and military applications and vastly aided by the growing sophistication of computer technology.

Vivitar optical designers, working with programs devised for highly specialized optical tasks, have used

computer generated designs to develop for Vivitar a new series of lenses capable of performance unreachable until now.

Each of the four Vivitar Series 1 lenses so far introduced has represented a breakthrough in the optical design of close focusing lenses. The 135mm f2.3 and the 200mm f3 are among the fastest automatic telephoto lenses in their respective focal lengths. They are unusually light and compact. Each has a uniquely positioned rear compensating element that automatically corrects aberrations at all points from the closest focusing point to infinity.

The 35-85mm f2.8 auto variable focusing lens is likewise a definite advance in lens design.



To come? Look for a 600mm f8 solid catadioptric lens of fantastically reduced size, a 90mm f2.5 macro, and a 28mm f1.9. Eventually there will be a complete optical system of more than twenty Vivitar Series 1 lenses, each representative of advanced technology and demonstrably superior to other lenses currently available.

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"I used to lack confidence in my work and was very hesitant in taking on any jobs, but now I have complete confidence that I can handle any situation that may arise. If anyone wants to truly learn photography, I would be honored to recommend your school."

Douglas J. Henry—
Mississauga, Ontario, Canada

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"I think that SMP has been a wonderful learning experience for me. Most of all, I now have the confidence and knowledge to do the work."

Jordan E. Battle—
Meridian, Miss.

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"I thought the SMP course was excellent and well presented. I was most impressed with the practical assignment side of the course. I gained a lot of confidence in my ability as a photographer by proving to myself I could do it through the practical assignments."

Dan Watts—
Dallas, Texas

Quality Instruction That Produces Results

"The instructors have been extremely fair in demanding at all times a very high standard for the submitted work assignments which have made me ever so confident to take and produce any type of photography with a professional touch. Thanks a million to all at SMP—A Wonderful Organization!"

Gordon W. B. Thomas—
San Juan, Trinidad, W.I.

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"I have been able to turn my newly-acquired photography skills into part-time earnings. The \$400 I made as a student went into additional equipment. I found the SMP course an excellent one. It gave me the confidence I needed in my free lance work."

Larry L. Schaffer—
Ferndale, Wash.

Qualifies You For Jobs—Or Your Own Business

"I now operate my own photo business and have considerable work as a free lance photographer. I do weddings, parties, banquets, real estate, copying. It goes without saying that your course has made this possible. It has given me the confidence to attempt all kinds of jobs."

Joe Abbott—
Danbury, Conn.

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"I feel that I have benefited from the course and have gained professionalism and self-confidence in my work."

Roy A. Dixon—
Richardson, Texas

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"I attended two photo schools and discovered SMP to be far superior in constructive criticism. The course provided the guidance to achieve quality in my photography. My earnings from free lance assignments have far surpassed the cost of the course."

Ms. Sandra D. Howie—
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learned by doing. And you've become adept with the equipment a

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CLUB CLOSE-UPS

JOAN YARFITZ

A SEARCH BEGINS



□ Recently, I received a somewhat critical yet provocative letter from a reader and a veteran camera club member. After quieting my temper and soothing my distraught ego, I reread the letter from a more objective viewpoint, realizing this particular reader was not angry at me but rather at the state of camera clubs that seem to be failing for lack of member interest and/or participation. Why was this happening? What, if anything, could be done to alleviate this situation? Among the long list of possible causes and effects given by the reader, a certain paragraph captured my attention.

"After 10 years of experience in this 23-year-old club and membership in a six-year-old club as well, I think I *know* what clubs need most. In a nutshell, it's good programs, ones that are informative as well as entertaining. It is my firm conviction that a camera club stands or falls depending on the program chairman. And he/she must have help and full cooperation."

My attacker was my ally after all! I agreed with him and began an investigation that is still continuing. As a guide I posed the one question basic to a thorough search and solution to the problem. *Where and to whom does a program chairperson go to find stimulating programs?*

Two potential solutions immediately came to mind—good programs could conceivably come from within the ranks of club membership, or they could be made available through outside sources. Who would those outside sources be? I considered local professional photographers who, although not club members, would probably be glad to give presentations during a season. Other community members such as do-it-yourselfers could be called upon to give lecture/demonstrations of how they built and use a photographic gadget. Local camera store employees are often willing and capable lecturers. But who else could program chairpeople turn to for informative, creative programming?

Then, as is often the case with the elusive obvious, it dawned on me. Who else but the manufacturers of photographic products and equipment would have the resources and creative energies

at their disposal to prepare and present the good programs for which camera clubs have been so desperately searching? Here was the obvious and logical place to look. I should have realized it from the beginning, since I had already discussed on several occasions the many audiovisual programs and pamphlets that Eastman Kodak has available for camera clubs (see "Club Close-Ups,"

subjects.

"Light Control with Filters" is an absorbing hour of exquisite photography and instructional commentary, again given by Mr. Slack. Discussed are protective filters, neutral density filters, filters for black-and-white photography, color conversion and compensating filters, gelatin filters, polarizers, cross-screens and diffusion filters. Each type



Scene from "Travel Interpretations," with Joe Marvullo.

November 1974, December 1975, January 1976).

Now that I had a direction, the rest would be easy. I began calling the product managers and creative marketing people of the major photographic companies, inquiring as to what they had available for camera clubs—lecture demonstrations, audiovisual materials, film presentations, etc.

The Nikon Educational Services Department of Ehrenreich Photo-Optical Industries, Inc. (623 Stewart Avenue, Garden City, New York 11530), was among the first to respond to my query. Yes, they have at the present time four audiovisual presentations available expressly for camera club use. They are free to clubs (you pay return postage, handling and insurance), but since the demand for them is so great, it's best to reserve them at least six months ahead of your programming date. The four topics are: "The World of Close-Up Vision," "Light Control with Filters," "Travel Interpretations" and "Special Effects." Showing time for each is approximately one hour; write directly to E.P.O.I. for scheduling arrangements.

"The World of Close-Up Vision" is a comprehensive overview of the theory and techniques of close-up photography, covering a variety of the accessories and methods used by John Slack (former Nikon School teacher) for creating a gorgeous world of close-up photography.

In addition, there are detailed discussions of lighting close-ups, how to keep your subjects stationary for photographing (it's *not* by killing them and preserving them in formaldehyde!), how to set up a mini-studio for close-up specimens and how to construct sets that simulate the natural habitats of your

is accompanied by pertinent and exemplary illustrations.

"Travel Interpretations" with Joe Marvullo (also a former Nikon School instructor) takes the viewer on a uniquely beautiful excursion into the world of a truly gifted interpretive photographer. Mr. Marvullo shares with his audience his many years of field experience and gives handy tips to the traveling photographer—what to carry in the way of film, cameras, lenses, accessories. He suggests that the photographer should always shoot with a theme in mind; in this way, a comprehensive photo story should evolve, showing the photographer's original vision and interpretation of where he/she has been. Included are informative discussions on depth of field, composition, metering and slide copying techniques for photo montage.

I did not have the opportunity to preview "Special Effects," as all copies were already on loan to camera clubs. However, if it's anything like the rest in the series, it promises to offer spectacular images accompanied by commentary from an expert in the field.

E.P.O.I. was the first to let me know that they are using some of their resources and talented personnel for the benefit of camera clubs. As other manufacturers respond and/or develop special programs for clubs, their contributions and approaches will be topics for future columns. The programming potential and projects that could be provided for camera clubs by the photographic industry are challenging areas that deserve further investigation. So far, this is only a beginning. □

Camera clubs please note: "Contest News" can be found on page 92.

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Bizarre juxtapositions—see page 215



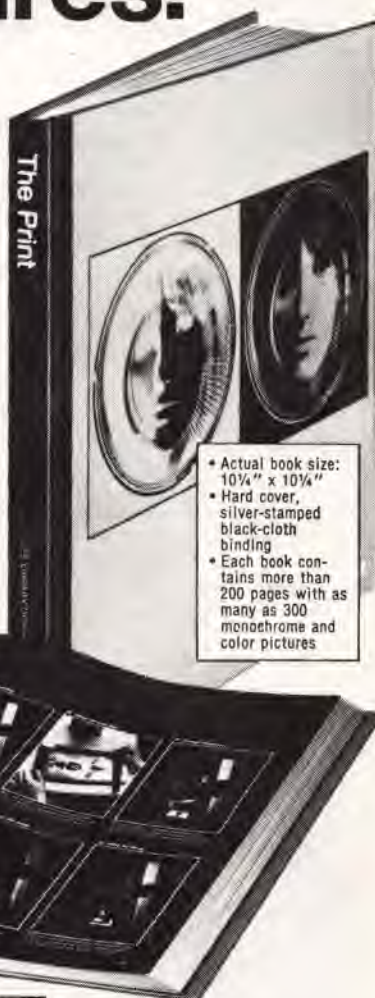
Solarization's hint of mystery—see page 163

Often, just a little more photographic knowledge can make such a difference. Outdoors, where you can achieve the most subtle color and mood . . . indoors, where you can take pictures even in the dimmest light . . . close-up, where you can capture details overlooked by the naked eye . . . faraway, where you can encompass all the splendors of landscape and seascape. And in the darkroom, where you can exert ultimate control and take your picture in any direction . . . from absolute realism to surrealism.

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BEHIND THE SCENES AT FILMEX



□ Today there are more than 400 film festivals held each year around the world. The world's largest public film event is the annual Los Angeles International Film Exposition. Last year, more than 80,000 people attended Filmex—more than the number attending the New York and Cannes Film Festivals put together.

Of course, Los Angeles is the center of American film production, but the fact that the industry is based in this city doesn't begin to explain the popularity of this noncompetitive, 14-day event. In fact, it raises a lot of questions. What kinds of films are screened during Filmex? Who attends? How are films chosen? How is the event structured? Just what makes this film happening different from all the rest?

"Filmex is more than a film festival,"

asserts Gary Essert, the event's director. "It's a unique forum for films, filmmakers and film-goers—the most comprehensive film event for the general public anywhere in the world."

Essert should know. Each year he, Associate Director Gary Abrahams and other representatives of the exposition fly to several festivals in Eastern and Western Europe in search of the best



films spanning the entire cinematic spectrum. The aim of these yearly sojourns is to locate and bring to Southern California audiences motion pictures not usually available to them.

These films encompass all filmmaking genres—feature-length and short, documentary, underground and major studio, spectacle and student work, animation and live action. In all, 200 films will be presented this year—these representing the best movies available from 30 participating nations.

Filmex '76 will be held from March 21 through April 4 at the Plitt Century Plaza Theatres at the ABC Entertainment Center in Century City. But planning and organization began just a few weeks after the 1975 exposition ended. Last May representatives from Filmex traveled, first to France, to the Cannes Film Festival, and then to several other countries in Europe to meet with national export associations, filmmakers, producers, film curators, archivists and distributors. Their selection tour, along with suggestions from a corps of 21 consultants which Filmex maintains around the world and additional programming ideas from the general public and from the cultural and academic institutions which cosponsor the exposition, resulted in many hundreds of films being sent to Los Angeles to be viewed by the selection committee.

While the selection process is carried out by the committee and its consultants, other members of the Filmex staff (many are students, filmmakers and film enthusiasts volunteering their time



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and energies) are caught up in the logistics and organization of the festival.

The really outstanding feature of Filmex has always been the quality and diversity of the films and special events included in the program. A devoted film enthusiast, Essert first became involved with festival organization as an assistant at the San Francisco Film Festival six or seven years ago. With the opportunity to attend several major festivals and to closely observe the operation of the festival in San Francisco, he began to note the things that work in programming and organizing a film event. Why couldn't these ideas be implemented in Los Angeles? Several other members of the film community, among them Philip Chamberlin and George Cukor, were also eager to begin a festival in Los Angeles. So they did.

A major criterion for film selection is to provide the most contemporary, most exciting films representing many countries and many filmmaking styles. "We try to bring to Los Angeles the films that are currently creating a big impression in the countries where they were made," says Essert. He stresses that, while most international film festivals are commercially oriented, designed to buy and sell films and arrange production deals, Filmex offers no awards or prizes. "Anyone can submit a film of any kind, as long as it has never been

seen before in L.A. It's an honor for a film to be selected for screening at Filmex. Several films we've brought to Filmex subsequently found distributors and have been shown in movie theaters in other parts of the country."

By the beginning of the year the festival operation is in full swing, with more than 250 people involved in various committees formed to carry out specific jobs. Staffers and volunteers create posters, programs and advertisements to saturate Southern California with news of the forthcoming expedition. One group of people makes ticket and box office arrangements; another is involved with the production of the Filmex Society Benefit Ball, a very important fund raiser.

The program is planned to give special emphasis to films which illuminate the growth and development of motion pictures. "You can evaluate contemporary films with much more perspective if they are shown in the context of films from an earlier era," Essert says. "That's our philosophy when we program rare and classic old films along with the best of the new ones." Although there is a reasonable admission fee charged at most of the screenings of the contemporary films, many of the older films are shown for free.

Filmex is scheduled to overlap with the annual Academy Awards presenta-

tions so that out-of-town visitors can come to Los Angeles and attend both events. Included in the celebration each year are retrospectives honoring major film people and a concurrently running industry conference dealing with a particular aspect of filmmaking. (This year the conference will look at the role of the producer in motion pictures, with representatives from the Hollywood studios and independent producers participating.) One of the highlights of last year's festival was a 24-hour science fiction film marathon; this year it's a 24-hour movie musical marathon. Silent films will be presented with live musical accompaniment, and there will be midnight movies and a special sneak preview. To finance these events, Filmex receives support from the City of Los Angeles, private grants, the Filmex Society and others as well as box office receipts from the various programs.

The historical attachment of Los Angeles to the development of film has been likened to the relationship between Florence, Italy, and painting. The analogy is certainly appropriate for those of us who view film as the major art form of this century. So it's entirely fitting that The Los Angeles International Film Exposition provides a comprehensive showcase for world cinema, presenting all kinds of films for the film-conscious public. □

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PRODUCT PROOF SHEET



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THE CASE FOR ADAPTABILITY

The Fiberbilt Adapt-A-Case Model P-100 provides the convenience of a customized camera case and the ability to allow any compartment arrangement quickly and easily. A patented system of thickly padded partitions interlock by means of a tongue-and-groove feature. Slots spaced one inch apart in both partitions and side-walls allow rearrangement or additions at any time. The case is made of wood grain fiber with impact resistant plastic end parts and is available in three sizes. Model P-100XL, 18x13x6 inches, is \$38.50; model P-100L, 16x11x5 inches, is \$31.50, and model P-100S, 12x8x5 inches, is \$21.50. Contact Fiberbilt Photo Products, 601 West 26th Street, New York, New York 10001.



NEW MINOLTA SR-T 202 INTRODUCED

New Minolta SR-T 202 camera incorporates Minolta's Contrast Light Compensation (CLC) through-the-lens exposure metering system, match-needle operation, mechanically timed focal-plane shutter with speeds of 1/1000 to one second plus B and bayonet-mount lenses. The SR-T 202 adds a new safe-load signal and memo holder/film reminder. The viewfinder shows the f-stop above, the shutter speed below, match needle at right to indicate exposure setting, as well as over/under meter range indicators and a battery check mark. The camera provides three separate means of focusing: central split-image rangefinder, microprism collar and surrounding full Fresnel ground glass. Finder eyepiece is slotted to accept correction lenses or special accessories such as right-angle viewer or magnifier. ASA range is 6-6400. Other features include a built-in hot shoe and PC receptacle, multiple-exposure capability, 10-second delay self-timer and depth-of-field preview. The SR-T 202 is available in chrome or black finish with a choice of 58mm f/1.2, 50mm f/1.4 or 50mm f/1.7 MC Rokkor-X lenses or without a lens. Contact Minolta Corporation, 101 Williams Drive, Ramsey, New Jersey 07446, for prices and details.

(Continued on page 26)

Please mention PhotoGraphic Magazine when inquiring to manufacturers about the items listed in "Product Proof Sheet."

New product information should be sent to the attention of Karen Geller, Managing Editor, PhotoGraphic Magazine, 8490 Sunset Boulevard, Los Angeles, California 90069.



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**ASANUMA AUTOMATIC 70-220MM F3.5
MULTI-COATED MACRO-ZOOM FIXED MOUNT LENS**
SPECIFICATIONS

Optical Construction	15 elements—12 groups
Angle of Acceptance	34—11 degrees
Aperture Range	f3.5—f22
Minimum Focusing Distance (Macro)	1 inch
Minimum Focusing Distance (Normal)	5 feet
Length	7¼ inches
Maximum Barrel Diameter	3¼ inches
Weight	44½ ounces
Accessory Size	72mm
Lens Hood	Built in

**ASANUMA AUTOMATIC 35-105MM F3.5
MULTI-COATED MACRO-ZOOM FIXED MOUNT LENS**
SPECIFICATIONS

Optical Construction	13 elements—11 groups
Angle of Acceptance	62—23 degrees
Aperture Range	f3.5—f16
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Minimum Focusing Distance (Normal)	5 feet
Length	4 inches
Maximum Barrel Diameter	3 inches
Weight	24½ ounces
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I'm Mara Mehlman, photography student, majoring in Commercial/Illustration. My fellow student, Michael Zaccardi, is majoring in Industrial/Scientific. Our ultimate goal is a BA Degree in professional photography. Portraiture, Cinema and Color Technology are also available majors plus minors in Undersea Technology and Photo Journalism. Come on along and get it all together with us ... you'll be glad you did!

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PRODUCT PROOF SHEET

(Continued from page 24)



ASANUMA OFFERS LENS WITH FUNCTIONAL VERSATILITY

The Asanuma Automatic 1/3.5-16 35-105mm zoom lens also has macro focusing ability, providing versatility in a wide variety of shooting situations. Normal minimum focus distance is five feet; minimum distance in macro mode is 6 1/4 inches. Optical construction is 13 elements in 11 groups; angle of view varies from 62-23°. Length is four inches; weight, 24 1/2 ounces, and accessory size is 72mm. Lens is multicoated, and has a suggested retail price of \$467. It is available in Canon FTb, Konica EE, Minolta, Nikon, Olympus OM-1 and Pentax mounts and is a product of Asanuma Corporation, 1639 East Del Amo Boulevard, Carson, California 90746.



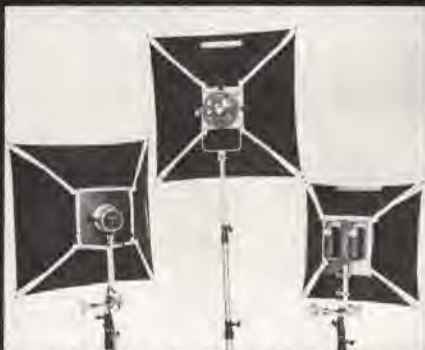
KONICA ADDS NEW FEATURES TO T3

Konica Autoreflex N-T3 has a built-in eyepiece shutter to prevent stray light from entering the camera's viewfinder; a permanently attached hot shoe; a reshaped self-timer/depth-of-field preview lever and an enlarged multiple-exposure lever. Other features are identical to the present Konica Autoreflex T3: automatic exposure control with override, center-weighted metering, bayonet-mount lenses, shutter with speeds to 1/1000 and two-way exposure memory lock controls. List price of the N-T3 body is \$390; black finish is available for an additional \$20; a factory installed split-image rangefinder is \$10. Further details may be obtained from Konica dealers or Konica Camera Company, Box 1060, Woodside, New York 11377.



SUNPAK STROBE ADAPTER FOR FLIPFLASH CAMERAS

Owners of pocket cameras designed for FlipFlash can now enjoy the advantages of electronic flash with the new Sunpak Hot Shoe Adapter. The adapter is a solid-state device which converts the Piezo current generated by the camera to an electrical impulse that trips the electronic flash in perfect synchronization. The unit plugs into the camera's flash socket and is held in place by a retaining clamp. The flash unit slides into the adapter's hot shoe. The Sunpak Hot Shoe Adapter for FlipFlash cameras has a list price of \$9.95; matching Sunpak 100 flash unit is \$19.95, or the matching Sunpak 200, \$24.95. Information may be obtained from Sunpak dealers or Sunpak Division, Berkey Marketing Company, Box 1060, Woodside, New York 11377.



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The Larson Soff Box, consisting of a custom translucent Reflectasol with super silver Mylar side panels, offers window light any time, any place. Three models are available: the Soff Box, which adapts to the Larson Strobasol; Soff Box-Universal, which attaches to most all other professional studio strobes, and the Soff Box-Mini which can be used with any shoe-mount strobe or handlebar-mounted AC strobe. All models direct a 100° beam spread of soft windowlike light with no spill or flare. The center mounting assures even light distribution with no hot spots or undesirable shadows. Suggested list prices range from \$89.95 to \$44.94. Write Larson Enterprises, Inc., 18170 Euclid Street, P.O. Box 8705, Fountain Valley, California 92708, for information.

(Continued on page 29)



Now you can make your own brilliant Cibachrome® prints directly from your slides.

Until now, color printing has been an involved, time-consuming proposition — characterized by long hours of trial and error, critical temperature and time controls and, all-too-often, disappointing results.

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Cibachrome color print material—Type A—

The remarkable new direct-positive print material that makes quality color printing from slides practical for the home darkroom.

PRODUCT PROOF SHEET

(Continued from page 26)



OBTAIN NEW HEIGHTS WITH BOGEN 3040 TRIPOD

The Bogen 3040 tripod has aluminum alloy construction for sturdiness and portability. A single locking knob controls extension of each leg. Extension height is 73 inches; unit folds to 37 inches and weighs 10 pounds. The 3040 has three-way pan/tilt action with three spirit levels—one for each tilt axis, one for the entire tripod. Additionally, the unit features removable camera-mounting plates so that several cameras equipped with accessory plates can be ready for instant on/off use. Also available is a set of accessory extension legs to extend total height to 92 inches. The 3040 tripod with standard camera-mounting plate lists for \$129.95; additional plates with either 1/4-20 or European mounting screw are \$11.95, and three extension legs are \$24.95. Contact Bogen Photo Corporation, 100 South Van Brunt Street, Englewood, New Jersey 07631, for further details.



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PONDER & BEST INTRODUCES THE SOLID CAT

The Vivitar Series 1 600mm f/8 solid catadioptric lens was designed in conjunction with Perkin-Elmer Corporation, incorporating optical achievements previously applied in space exploration and other advanced sciences. The lens measures only 3 5/16 inches in length, is 4 3/16 inches in diameter and weighs three pounds. The solid construction results in high resistance to damage by shock and allows the lens to maintain precise optical alignment in temperature extremes. This T-mount lens has nine elements in seven groups, an angle of view of 4° and a minimum focusing distance of 23 feet. In addition, the lens can be rotated 360° inside the tripod mounting ring and locked into any position. A safety catch holds the lens in place during rotation. Filters of 35.5mm are inserted at rear of lens inside T-mount. Accessories include: screw-in hood, detachable tripod socket, filters, lens case and front and rear lens caps. Contact Ponder & Best, Inc., 1630 Stewart Street, Santa Monica, California 90406, for pricing and details.



FUJI'S POCKET FUJICA 200F HAS FLIPFLASH

Fuji's new pocket camera kit includes the Pocket Fujica 200F camera, eight-shot FlipFlash unit, Fujicolor F-11 color print film and carrying strap. Kit has a suggested list price of \$27.95. The Pocket Fujica 200F camera has a 29mm f/11 fixed focus lens and a shutter speed of 1/80, built-in ultraviolet filter, light-touch shutter release, tripod and cable release sockets. For more details, contact Fuji Photo Film U.S.A., Inc., 350 Fifth Avenue, New York, New York 10001.

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To acquaint the readers of this publication with the easy-to-follow rules for using their cameras—developing their own pictures—mastering photo techniques—improving home movies—in short, mastering all phases of amateur photography, the publishers have printed full details of their interesting self-training method in a NEW booklet, "How You Can Become a Better Photographer," which will be mailed free to anyone who requests it. No obligation. Simply send your request to: American School of Photography, Division of Career Institute, Dept. 817-52, Sherman Turnpike, Danbury, Conn. 06816. A postcard will do. A home study course.



HANIMEX INTRODUCES 110 FLIPFLASH CAMERAS AND ELECTRONIC FLASH

Two new pocket cameras and a new electronic flash unit compatible with the FlipFlash system are now available from Hanimex (U.S.A.) Inc.

Hanimex PF 128 Pocket Camera, above, finished in black with woodgrain trim features an optical glass lens and built-in UV filter. Available in a package containing camera, wriststrap, FlipFlash and a 12-exposure roll of Kodak Kodacolor II film; suggested list price is \$32.95.

Hanimex PF 118 Pocket Camera utilizes a piezo-electric generator to fire the FlipFlash array. It has a two-element f/9.5 lens, a two-speed shutter (1/45 and 1/90), and is compatible with the PFX33 flash unit. Suggested list price of the PF 118 with wriststrap and flash array is \$24.95.

Hanimex PFX33 Electronic Flash is powered by two AA alkaline batteries good for approximately 150 flashes. It offers an ASA 25 guide number of 30, a 10-second recycle time and a list price of \$23.95. The PFX33 can be used with all Trimlite pocket cameras with the exception of the Model 48.

Contact Hanimex (U.S.A.) Inc., 7020 North Lawndale Avenue, Chicago, Illinois 60645.

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able, and is exceptional in another important respect. It's both an automatic and a manual camera. In its automatic mode, the K2 selects shutter speed for you—electronically—from an infinite range between 1/1000 and 8 sec.; in its manual mode, you choose one of 15 speeds from B, 8 secs. to 1/1000, match the needle and shoot.

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The Spotmatic F has already established itself as a classic 35mm SLR camera. And for good reason. This camera features traditional Pentax human engineering and craftsmanship, along with full aperture metering, which allows you to focus and read the meter, without having to stop down the diaphragm. In addition, the Spotmatic F offers instant-on metering; 20-3200 ASA range; horizontal-run, focal plane shutter with B, speeds from 1 to 1/1000; and a self-timer.

Understand you.

The Asahi Pentax KX: The camera whose viewfinder tells all.

If you think your next camera ought to show you f/stop and shutter speed in the viewfinder, you're ready for the Pentax KX. Our most sophisticated manual camera.

The remarkable KX also offers center-weighted, match-needle metering; an improved

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POINT SOURCE

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PUT SOME FEELING INTO YOUR PRINTS



□ How do you know when you've made the best possible print from your negatives? Each negative requires its own special way of printing, since every negative is different, just

as every voice is different. Your ability to select the right way of printing any particular image is what stylizes your work. Some of the more common printing decisions involve: dodging, burning-in, cropping, paper selection, texture screens, diffusion, bleaching, toning, etc. It's often on the strength of your printing decisions that your work is admired or criticized. For a basic understanding of good printmaking technique see "Point Source," August, 1975 issue. What I'm discussing here, though, is beyond the basics; it involves your ability to print a negative with *feeling*.

With a little practice most of the creative decisions become routine; your ability to look at a negative and visualize the final print will come in time. Occasionally, everybody has to print difficult negatives. If you're just starting in photography, it may be that the negatives that give you the most trouble are those with obvious flaws; if you've printed for awhile, you may know better. Negatives that require side-by-side use of a few different creative techniques help you to control your skills. Sometimes the most difficult negatives are not those which *appear* hard to print—the negative that produced the accompanying illustrations is an example of this kind of negative.

In the original scene the sheep had gathered beneath the shade of a few trees. Naturally, my camera exposure was made to record detail in the open shade. Since that exposure was greater than the exposure I would have given the scene if the animals were in bright sunlight, the surrounding area of sunlit grass received too much exposure and shows up as a distracting bright band along the entire top edge of the photograph (see photo No. 1). There are two obvious solutions to this printing prob-



2 Negatives like the one which produced these images can sometimes fool you in the darkroom. Toning down a distracting background is not as hard as you think—or is it?

lem which appear in my "mental checklist" of procedures. Cropping seems to be the most obvious solution; that would resolve the problem of the disturbing bright band, but it would also butcher the image, since some of the animals happen to overlap the area to be cropped. Also, what would cropping do to minimize the distracting sunlit hindquarter of the sheep on the far left of the photograph? I decided cropping would create more problems than it would cure.

The other obvious solution to this printing problem is to burn-in the bright areas after exposing the print for the area of primary importance. There is a rule-of-thumb which may be useful to you when dodging and burning-in. This general guideline says that any burning-in or dodging should not exceed 50 percent of the original exposure time. In excess of that range these techniques would probably draw more attention to those areas by unevenly blending with the surrounding areas of the print. In the case of this particular

negative, the original exposure time was 15 seconds. According to the traditional rule-of-thumb, therefore, the additional burning-in time should not have exceeded $7\frac{1}{2}$ seconds or 50 percent of the original 15 seconds. In fact, the actual burning-in time for the distracting areas mentioned was 90 seconds.

The key to producing a believable print from a negative which requires such extreme burning-in is the careful blending of surrounding tones. Some people prefer working with burning-in tools or opaque cardboard with a hole cut out of it; I find that my hands can more easily adapt to the unusual shapes required for this kind of burning-in. The procedure in either case is similar though. Burning-in requires that you allow additional light to reach the paper only where you want it. Keep the burning-in tool moving in the light path, both back and forth and up and down, during the additional exposure time. It doesn't matter whether you use your hands or some other tool, as long as you can master the technique.

Negatives like this are so extreme that it becomes almost like printing two negatives at once. The open shade is essentially flatlit and might require a grade No. 2 or 3 paper. The sunlight beyond is not only much brighter, but it is more contrasty; it might print best on a grade No. 1 paper. You may find it helpful when printing negatives like this to use a variable contrast paper. Make the initial exposure for the shady foreground scene through a No. 3 filter, for instance; then switch to a lower contrast filter like a No. 1. This will allow you to more naturally blend the necessary burning-in for *contrast* as well as *exposure*. Of course, the capability of local contrast control on a single sheet of paper is available only with variable contrast papers (like Kodak Polycontrast) and their corresponding contrast-selecting filter kits.

How do I know when I've made the best possible print from one of my negatives? When it *feels* good. I may never get to print a perfect negative; in fact, I hope I never do—imagine how boring that would be. □

SLR interchangeable lenses: more than what meets the eye.

Some basic facts from Mamiya.

Picking the right 35mm SLR camera is tough enough. But then you have nearly nine hundred interchangeable lenses to pick from.

Confusing? Only if you're not prepared. Last time, Mamiya presented some basic facts on SLR metering. This time, here's help with lenses.

What lens fits?

A quality SLR like Mamiya has a complete line of compatible lenses available, designed and built with the same precision as the camera body. Mamiya/Sekor lenses also fit any SLR with the 42mm universal thread mount and offer you a quality alternative if you own a camera in this family.

The right lens for the shot.

Think of the lens as a tool to capture an image—how do you want that image to look?

Normal 50-55mm—things look pretty much the same thru a normal lens as they do thru your naked eye. Objects keep the same perspective, and don't look much bigger or smaller. It's a great workhorse lens, but you may not always want "normal" photographs. Mamiya sells body and lens separately to give you a choice.

Wide-angle 21mm, 28mm, 35mm—these short focal lengths make the perspective deeper and wider than what your eye sees. They open up tight interiors and gather in panoramic landscapes. Their deep depth of field lets you shoot quickly. They can radically alter perspective to highlight one feature of the scene as shown here:



Moderate telephoto 85mm, 105mm, 135mm—these let you stand back to put your subject at ease. You get relaxed portraits with a truer perspective, and great candid shots, too.

Long telephoto 200mm, and up—these greatly magnify distant objects. They also compress the distance between near and distant objects. Their very shallow depth of field lets you sharply focus on one detail while blurring others, as shown here:



Zoom—the Mamiya/Sekor 90-230mm Auto SX zoom lets you change focal lengths without changing lenses. It's great for shooting sporting events.

Macro—want extreme close-ups? The Mamiya/Sekor 60mm f/2.8 Macro SX lets you capture life-size images of the smallest objects without adapters.

There's a lot more to our story.

Mamiya has all the lenses mentioned above, plus 600mm and

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Their excellent sharpness and comfortable price make them a great "next lens" for any SLR with an M42 universal thread mount.

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For free brochures and test reports, see your Bell & Howell/Mamiya dealer or send in the coupon. Because the more you know, the better you'll be able to pick the SLR that's right for you.

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GUIDE LINES

PAUL R. FARBER

MORE ABOUT PHOTOGRAPHIC'S PHOTOMETER



□ Since the publication of my article on how to build a low-cost enlarging photometer in the December, 1975 issue of *PhotoGraphic* (see "Meter the Negative"), I have received a number of telephone calls and letters of inquiry from readers who wanted to know more about the unit and additional procedural matters concerning its use.

For those who wanted to know more about photometers in general, and my photometer in particular, let me say that photometers are not new to photography. In fact, one of the first serious articles dealing with the construction of a photometer appeared in a '30s edition of an English periodical, *The Miniature Camera Magazine*. The MCM Grease-Spot Photometer (so-called because the photometric screen consisted of a piece of fine writing paper, in the center of which was placed a drop of light machine oil) gained great popularity. So much so, in fact, that by popular demand it was manufactured and placed on the open market.

In 1937, in his book, *Perfect Print Control* (Galleon Press), Laurence Dutton described not only how to construct a variety of photometers ranging from the simple to the complex but also how to use them for better prints. The book represented a major effort to bring a degree of order and sophistication to the art of enlarging. It has become a classic reference work in my library.

Most photometers work on the same principle: a standard, calibrated brightness is matched to an unknown brightness. When both reference areas are in visual balance, working information can be extrapolated. However, the advent of the silicon cell made visual comparators almost obsolete. Instead of relying on the sensitivity of the human eye, one could, for example, simply line up a needle on an instrument such as the Weston Model 877 Photographic Analyzer (alas, no longer manufactured) and gain the same information. Eventually, the large-celled silicon analyzers gave way to the smaller, more sophisticated CdS cell and even more accurate instruments became available.

Incidentally, the gray-scale device contained a built-in trap. Many readers noticed the error and pointed out that, as presented, the accumulated exposures could not be achieved by making the exposures as indicated. The original presentation implied that each strip was to be exposed separately. You can, however, obtain the needed exposure increments by using the slider—from the bottom up—and make exposures of 2, 1, 1, 2, 2, 4, 3, 7, 8, 15, 30, 60 and 60 seconds.

As for my photometer, it is a relative-



PhotoGraphic's enlarging photometer, shown above, is a low-cost aid to successful printing procedures in the darkroom.

ly simple device that can give excellent results if used with a degree of patience. As for the readers who asked questions about my photometer, let me say in response to a few inquiries that it *cannot* be used to analyze color negatives. You'd be better off with one of today's low-cost units such as Beseler's PM-1 Color Analyzer.

Other readers wanted to know the type of potentiometer I used in the unit, claiming that I neglected to say if it was linear or logarithmic in characteristic. Sorry about that. The potentiometer was logarithmic. Don't make the mistake of using a linear taper potentiometer. It won't work properly.

Now for those readers who wanted to know if there were other methods of using the photometer, the answer is yes, there are. For example, there is another way to compute the proper exposure and that is to add another column of figures to the basic chart once it has been compiled. These figures would be the ones used to produce a maximum black (not the step under maximum black which was used to compute the Exposure Index Scale), which can be determined from the test strips. In this procedure the required contrast grade is determined in the same fashion as outlined in the original article. However, after the proper contrast grade or variable contrast filter has been determined, rotate the Paper Speed Dial on the photometer to line up with the exposure which produced the maximum black tone on the test strip.

Next place the photometer on the easel, directly under the lightest part of

the projected image and balance out the spot using the enlarger lens. In this way, the exposure will remain constant for any grade of paper, thus eliminating any chance of incorrect exposure due to reciprocity failure.

If you're a pretty fair hand at estimating contrast requirements for your negatives, you can eliminate the gray-scale testing procedure and use the meter to determine the proper exposure for any enlargement. For this method the paper speed of an emulsion will have to be determined in advance. Stop down the enlarging lens to $f/8$ and, with a negative in the carrier, make a standard test-strip print to determine the correct exposure. Let's assume this turns out to be 15 seconds. Now place the photometer on the easel with the photometric screen directly under the brightest part of the projected image and balance out the spot using the dial of the photometer. Locate the time of exposure used to produce the test print on the Time In Seconds dial. Opposite the time will be found a Paper Speed number. Write this number on the box of enlarging paper. Whenever that particular box of paper is used again, merely balance out the spot, with the photometric screen under the brightest part of the projected image, and opposite the Paper Speed Index will be the correct exposure time in seconds.

In the original article I mentioned that if one's negatives consistently call for a contrasty paper, then the negatives are obviously too flat, and a longer negative developing time should be used. Conversely, if one's negatives consistently require a soft grade of enlarging paper, then the negatives are obviously too contrasty, and negative development should be reduced. One should always strive for a negative that prints well on a normal grade of enlarging paper. Then, if you want to make a print that is very contrasty or very flat, you have the option of going to either extreme by using a soft or contrasty enlarging paper if you wish to produce offbeat effects. Use of the photometer will insure your ability to customize your negative processing requirements.

Finally, remember to turn off all darkroom lights such as overhead safelights when using the photometer. The only light should be from your enlarger; otherwise, the readings will be completely thrown off. The photometer is to be used in total darkness. Also, wait a moment or two for your eyes to adapt to the darkness before using the unit.

If any of you have additional questions about the unit or its use, drop me a line at *PhotoGraphic Magazine*, 8490 Sunset Blvd., Los Angeles, California 90069. However, please include a stamped, self-addressed envelope to expedite the return of your answer. □

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SELF- ASSIGNMENT

BEN HELPRIN

THE "PERFECT" NEGATIVE



□ The perfect negative, referred to in many textbooks, is "perfect" only in a representational, not an interpretational, sense. This sensitometrically perfect negative produces a photograph

whose tonalities are accurately proportional to the tonalities originally seen in the subject matter. Such a literal negative cannot be considered as universally perfect because the desired technical characteristics of a negative cannot be rigidly and universally defined.

The technical characteristics of a negative should be determined by the pictorial purposes of the photographer. Thus, the representational tonalities of a "perfect" negative may be anything but perfect if the photographer wishes to produce a nonrepresentational, interpretive print. Differences in pictorial purposes will often require a deviation in the "normal" exposure and development procedure. However, a photographer must first know how to produce a sensitometrically perfect, tonally representational, normal negative before he can knowledgeably control interpretational deviations from this norm.

The first step in the production of such a negative is precise exposure determination. To compute precise exposure you must first determine the true or effective ASA speed rating for your film. The manufacturer's suggested ASA rating is given only as a general guide and not as an absolute measurement. The effective ASA rating—which is the value you must use to compute exact exposure—is empirical. It depends not only upon the inherent speed of the film but also upon the particular equipment and working methods of the individual photographer. The following procedure will enable you to determine your own ASA film-speed values:

1. Load your camera with a low speed color transparency film, such as Kodak Kodachrome KM 135 or Kodak Ektachrome-X 120. This type of film displays an extremely narrow exposure latitude which, coupled with the manufacturer's subsequent precisely controlled development, makes any errors in exposure readily apparent.

2. Set your meter to the ASA rating

suggested by the film manufacturer.

3. Photograph a number of different scenes containing a wide range of tonal values. The scene should contain some shadow areas that are not overly dense and black. Textural and color detail should be visible in portions of these shadow areas. The scene should also contain at least one fairly large, detailed highlight area such as a textured, slightly off-white shirt. Avoid very low or

ASA/E.I. FILM-SPEED RATINGS IN 1/3-STOP INCREMENTS

1	10	100	1000
1.2	12	125	1250
1.5	16	160	1600
2	20	200	2000
2.5	25	250	2500
3	32	320	3200
4	40	400	4000
5	50	500	5000
6	64	650	6500
8	80	800	8000

Note: Raising the ASA speed reduces the exposure, and lowering the ASA speed increases the exposure. For example, using the ASA value of 64 as a reference point, a value of 80 would give 1/3-stop less exposure, and a value of 100 would give 2/3-stop less exposure. Conversely, a value of 50 would give 1/3-stop more exposure, and a value of 40 would give 2/3-stop more exposure.

very high contrast lighting. Fairly bright, slightly overcast skylight is ideal for this assignment.

4. Bracket the exposure for each scene in 1/3 f-stop increments—by one stop above and one stop below the "normal" exposure indicated by your meter. Thus, your exposure series for each scene will run: -1 stop; -2/3 stop; -1/3 stop, "normal," +1/3 stop, +2/3 stop and +1 stop.

Note: It is often difficult to obtain diaphragm settings that accurately produce these required 1/3-stop exposure increments. However, extremely accurate 1/3-stop bracketing can be accomplished easily by using two inexpensive Kodak Wratten No. 96 gelatin neutral density filters of .10 density each. The exposure bracketing procedure is as follows:

1. Set the diaphragm of the lens at the f-stop indicated by your exposure meter. This setting remains unchanged.

2. Set the camera's shutter at twice the speed indicated by your meter (i.e., an indicated meter speed of 1/125 would be set on the camera at 1/250, etc.) to produce a -1-stop exposure.

3. Set the camera's shutter at the actual speed indicated by your meter and expose the scene: with both .10 ND filters over the lens to produce a -2/3-stop exposure; with one ND filter over the lens to produce a -1/3-stop exposure, and

with no filters over the lens to produce a "normal" exposure.

4. Set the camera's shutter at half the speed indicated by your meter (i.e., an indicated meter speed of 1/125 would be set on the camera at 1/60, etc.) and expose the scene: with both .10 ND filters over the lens to produce a +1/3-stop exposure; with one ND filter over the lens to produce a +2/3-stop exposure, and with no filters over the lens to produce a +1-stop exposure.

A printed card indicating the exposure variation should be included in each scene to avoid later confusion.

5. Determine which of the bracketed exposures produced the best tonal rendition of the scene. Examine the processed slides carefully. Overexposed slides will exhibit good detail in the shadow areas, but the highlights will be "blocked" and lacking in detail. Underexposed slides will exhibit good detail in the highlight areas, but detail in the shadow areas will be lost. Correctly exposed slides will show excellent textural and color detail in both the highlight and the shadow areas, and the midtone areas will show full color saturation.

6. Consult the chart accompanying this article to determine your own empirical ASA film-speed ratings (E.I.). Let's assume that your test film had a manufacturer's suggested ASA rating of 25, and you found a -1/3-stop exposure produced the best rendition. The chart shows that an E.I. rating of 32 would produce 1/3-stop less exposure than an ASA rating of 25. Thus, when using this film, you would set your meter to an E.I. of 32 and use the meter's indicated exposure without further correction.

Fortunately, the proportional increase or decrease in exposure determined for your test film is also applicable to other films. For example, let's again assume that a -1/3-stop exposure had proved best with your test film. A -1/3-stop exposure would also be empirically best for another film such as Kodak Tri-X, which has a manufacturer's suggested ASA of 400. The chart indicates that an E.I. of 500 is needed to produce the desired 1/3-stop decrease in exposure. Thus, when using Tri-X film, you would set your meter at E.I. 500 and use the meter's indicated exposure without further correction.

The same principle, of course, holds true for whatever amount of exposure correction, if any, your tests determined was necessary, and you have now established the empirical film speed ratings required for precise exposure computation. Remember, however, that these ratings may change if you change your equipment or working procedures.

Next month we'll discuss a procedure for determining precise empirical standards relating to film development. □

THE ABC's OF PHOTOGRAPHIC HISTORY

AN ALPHABETICAL ROMP THROUGH THE PAST
BY KALTON C. LAHUE



In these days of nostalgia for 10¢ rolls of film and \$2 cameras, photography's past has taken on a whole new aspect for hobbyists. Those old enough recall the "good old days" fondly, while the youngsters wonder what it was really like. One of the best ways to give you a bit of the flavor of the past half-century is an alphabetical trip through the high and low points. The perceptive reader will reaffirm his suspicion that there's really nothing

new under the photographic sun. So hang on for a quick trip through the ABC's of photographic history.

A is for Autographic: Supposedly the result of the largest single payment ever made for *any* invention, the folding Autographic Kodak introduced in 1914 was manufactured in various guises for two decades, with Autographic film produced until World War II. The concept itself was simple enough; a carbon coating was placed

at selected spots on the inside of the backing paper. Using a stylus provided, the photographer wrote through a small trapdoor on the camera's back. Stylus pressure transferred the carbon to the end of the negative; thus the identification ultimately appeared on the print, or did it?

As might be expected, commercial photofinishers did not do handsprings—printing the Autographic negatives required longer printing frames to include the writing, and did you ever hear of a finisher who *liked* to buy modern equipment? Despite the fact that much of its value was rendered impotent by the finishers, the Autographic was a dandy merchandising idea and sold scads of cameras over the counter. It may come as a surprise, but although the Autographic feature cannot be used these days, a number of the workhorse cameras using roll-film sizes still available are presently in active use by sidewalk photographers in places like Tijuana, Mexico.

Will the idea ever return? Well, Canon currently offers a couple of cameras which print the date *right on the negative*, and guess what? Photofinishers still manage to chop off part or all of it when they print!

B is for Bantam: Another idea from Kodak, but this time the boys in Rochester laid an egg. A clever concept designed to make better use of the 35mm film width while providing casual photographers with shorter (eight-exposure) loads, it had few takers. Designated 828, the biggest problem with the Bantam format was that the tightly wound film sometimes took a "set," resulting in film that simply would not lie flat in the film plane. But as the only 828 non-Kodak cameras were extremely cheap, you couldn't blame it all on the film—most wouldn't have taken sharp pictures with a glass plate in the film plane.

A highly desirable collectors' item these days, the most popular camera of the format was the Kodak Bantam Special. And what happened to the film concept? Well, Kodak's best customer turned out to be a Glendale, California, company that offered this camera they called a Fotron. It was sold door-to-door with a lifetime free film offer—you mailed the sealed, drop-in cartridge back to the manufacturer for processing, and they returned another with your prints. And what did the cartridge contain? That's right—a roll of 828 film. Well, if they could do it, why not Kodak? And now you know where the 126 easy-loaders came from!

C is for Ciro: Solidly constructed, relatively inexpensive and quite popular, this was a line of twin-lens reflex cameras offered just before and just after World War II and made available with five different combinations of Wollensak lenses and shutters. Those in the know disagree as to whether Wollensak killed Ciro (pronounced seerow) or vice versa, but both are long gone from the photographic scene. Incidentally, Graflex bought the Ciro dies, continuing the cameras under the Graphic 22 nameplate for several years. And where is Graflex today? See G.

D is for Direct Positive: A means of doing away with the negative to produce a picture in "one minute" or less, this pre-Polaroid concept still exists today. Most DP cameras are found disguised as those "three-for-\$1" picture machines in department stores and bus stations or on street corners



1. Before flashbulbs, photographers used flash powder, flash sheets and flash tape for illumination. In this Kodak PR shot of the mid-'20s, our hero is about to ignite a flash sheet. By the way, that's a Kodak Autographic on his sturdy tripod.

2. Whatever happened to 828 Bantam? Well, here's where much of it ended—in a Fotron Snap-Load Magazine. The Fotron, by Triad Corporation of Glendale, California, was one of those "better ideas" that went completely haywire, but it set Kodak engineers thinking, and today we have 126 as a result.

in foreign countries. But with the modern Polaroid equipment available the days of DP are as fast fading, as were the original prints.

E is for Elwood Pattern Works: These people produced the world's heaviest enlargers. Built like battleships using genuine metal castings, design and appearance were secondary to Elwood—its primary concern was making an enlarger that would take any kind of a beating you cared to give it. Rumors have had the company in and out of business for years now, but if you're interested, it still exists at 38 Shelby, Indianapolis, Indiana 46202. Do they still make enlargers? Well, if you had owned an Elwood, would you buy another?

F is for Fingerprint Cameras: Very

big in their time, these still exist today on the pages of the latest Burke & James catalog. Once there were two—the Graphic and the Watson-Holmes—but only the latter survives today. Priced at \$220, you get eight "D" batteries, four standard bulbs and a gray metal case with the five-pound beast. Why use an inferior substitute to photograph your fingerprints when you can do it with the original item designed for the job?

G is for Graflex, Graphic, et al: While the cameras are no longer produced, the company itself hums along as a part of Singer, making audiovisual equipment and administering things like Job Corps camps. Its strobe line was also discontinued a few years back, but the name and dies were purchased by another firm in Florida, and like the proverbial penny, it has recently been reintroduced to the trade.

H is for Half-Frame: Never a real biggie, cutting a 35mm frame in half was not, as many think, a Japanese idea that flopped—it had appeared as early as 1914 with the Simplex and Tourist Multiple cameras, reappearing over the years courtesy of Ansco and Universal. Its film economy sold a lot of cameras, but the problem of hand-mounting color slides prevented long-term growth, and by the time Kodak and other commercial photofinishers climbed aboard the bandwagon, compact full-frame cameras and 126 easy-loaders had killed it. The best of the lot, the Olympus Pen F series is the hottest (and most overpriced) item on the collectors' market these days.

I is for Interchangeable Backs: This is the great dream of the camera design fraternity, having appeared almost from the time of the first camera. More recently, the concept has been confined to the ultra-sophisticated, expensive cameras like the Ektra and Contarex, with resulting minor impact on the 35mm field. Why the idea hasn't proven more popular in a small size camera is a real mystery, unless the appeal of owning a second camera body outweighs the practicality of the interchangeable back. At any rate, look for the appearance soon of another 35mm whose prototype was shown at the last Photokina, complete with—you guessed it!

J is for Jen Flash: A clever means of synchronizing Leica cameras in the early '50s, this approach used a ring which fitted over the speed control dial, tripping a microswitch as it rotated. Surefire and neat, it was far more reliable and handier than Leica's own

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PHOTOGRAPHIC HISTORY

unit, but Jen's good ideas did not stop with flashguns.

The company had another of those "better" ideas called Jen-Dip. Back in that era, blue bulbs for use with color film were expensive, and clear bulbs were still king. So along came a bottle of glop which you poured into a deep dish and dipped your clear bulbs into

to coat them blue or amber, depending upon the film you were using. Yup, Mr. Jen had thought of everything—and it even worked!

K is for Kryptar: No, this was not Superman's home planet, but a black-and-white film which appeared in the late '40s. Manufactured in Rochester, New York (of all places), the product was not much to get nostalgic about, and a fire finally wiped out the



plant, taking Kryptar with it. This item wouldn't rate mention save for one fact—the owner, one W.J. Brown, went on to bigger and better things like Dynacolor, Dynachrome and what is now the photographic division of 3M Corporation. What do you mean, you didn't know that 3M has a photo division? They respool foreign film and sell it under private labels in discount stores all over the country!

L is for Linex: This unique (some said ugly) stereo camera had several strikes against it before ever reaching the public. Manufactured by Lionel (they also made model trains), the camera used its own film cartridge, film format and viewing system and was a complete flop soon after its introduction two decades ago. As you might suspect, it's become a most desirable collectors' item today. Despite past mistakes like this one, Lionel is still in the model train business; just think how much their stock would go up if they could locate a few crates of unsold Linex cameras today!

M is for Mail-In Cameras: Another concept that never seems to die, the disposable or recyclable camera is also alive and well, presently living on under the guise of the Lure camera and selling well in Mexico to American tourists. Just when everyone thought that the idea had reached its logical end, the advent of 110 film gave it a whole new lease on life, and somewhere in these United States this very night, a single light bulb is burning brightly, as another would-be entrepreneur is busily putting pen to paper to design another disposable camera.

By the way, the majority of these disposables seems to sell to camera collectors who realize the futility of it all. If we could just convince those

1. Know anyone who collects ancient flashguns—they'd make a prime subject for a fascinating collection. As you can see, attaching a pan to an old flashlight was clearly acceptable for an early synchronizer; some even left the name of the flashlight (Eveready) on the bottom. The Kalart Micrometer, shown at center right, revolutionized the field of amateur flash pictures. Another popular model, the Mendelsohn Model E at right, was also sold as the Kodak Senior Flash Gun.

2. The original UniveX A (center) grew eventually into a series of folding cameras using the same "OO" film. The Model AF-3 is representative of the S2 cameras. The Norton at right bears a not-so-strange resemblance to the UniveX A—the latter was copied from the Norton design.

3. Exposure meters—or how to tell the light of day. Another fascinating object for collectors, they came in many different sizes and shapes. The Watkins (left) and Ansco (bottom right) both used photo paper exposed to light and then compared to a known value. The early General Electric and a more modern Weston Master were popular photoelectric methods of exposure determination in the '30s. The UniveX extinction meter and Relio exposure scale were low-buck, high-volume sellers to those without the price of a jeweled movement.

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PHOTOGRAPHIC HISTORY

who work so hard to revolutionize the mail-in camera concept that the world is not yet ready for another one. We might all be spared the trauma of locating the latest before its manufacturer goes bankrupt.

N is for Norton: Most collectors think that the camera was a UniveX, but it wasn't. Tiny, inexpensive (50¢) and using a nonstandard film format, the camera's most unique feature was its use of the film spool as the winding knob. Kodak even manufactured film for the Norton until World War II came along.

O is for Opema: This Leica copy made the mistake of producing 42 exposures on a 36-exposure cartridge by the simple technique of using a 24x32mm frame size. Even with a focal-plane shutter, f/3.5 lens and a \$59.50 price tag, it didn't sell. Do you wonder why?

P is for Perflex: A pioneering line of American 35mm cameras which ended production with its Cee-Ay 35 model, the manufacturer lives on today as International Camera Repair Service, the world's largest "you break 'em, we fix 'em" house, but they have long since used up the spare parts once available for the venerable camera line.

Q is for QRS: Through a series of mergers, this pioneer manufacturer of home movie and a 35mm still cameras became a part of today's Bell & Howell. But if you're in the market for player piano rolls, you'll find the name with its unique trademark still alive and well. The current nostalgia boom in pedal piano music has kept its Buffalo, New York, factory hustling all through these recession-darkened days.

R is for Rapid: A real neat idea if you were serious about keeping the film flat in its plane, but a slow and cumbersome loading process for the fumble-fingered amateur, this 35mm cartridge-to-cartridge concept offered by German and Japanese manufacturers as competition for the 126 drop-in cartridge almost drove them all into bankruptcy. You'll still find some camera stores offering excellent prices on Rapid-loading camera kits, but locating the film is another thing, despite the fact that Rapid loads are still available.

S is for Seroco: A trademark that you seldom come across these days, this once denoted the photographic products offered by Sears, Roebuck & Company, the largest mail-order house in the world. While everyone knows Sears today, what happened to Seroco?

T is for Tynar: This prepocket 16mm camera had an interesting design, low price and short life back in the days of the submini revival after World War II. Designed by Dick Bills (who also did the Vokar), it was a winner in concept and manufacture, but on the market it was too little and too early. A rip-off of the design, marketed as the Minute 16, fared even worse.

U is for UniveX: Millions of these tiny cameras using nonstandard "00" film were made and sold in various forms; most were cute, and some even took fairly respectable pictures. Film was 10¢ a roll for six pictures, and photofinishers hated the stuff even more than Autographic negatives. World War II brought an end to the supply of inexpensive Belgian film, and although a half-hearted attempt was made to market them after the war, the fun was over once color became king, and the manufacturer went bankrupt.

V is for Victor Flash Powder: Not just another "flash in the pan," this was hot stuff and gave even, if somewhat smoky, illumination. A first cousin to gunpowder, it became a not-so-fond memory when flashbulbs appeared in the early '30s, but real old-time photographers still carry the scars of their occupation.

W is for Weimet: After World War II, dozens of fly-by-night film companies sprang up and disappeared. While some had hopes of getting a toehold alongside the yellow box, most were calculated rip-offs. Weimet offered its "Super-tone" color film to "reproduce color in its natural, lifelike beauty," even with a box camera. Rated at ASA 50, the stuff sold for \$1.69 in 120 rolls, including processing and one 2 1/4x3 1/4 color print of "your favorite transparency." Marshall oil colors were a somewhat better buy.

X is for X-Ray Cameras: While there really are such things for medical use, the discovery of X-rays brought forth fears that the time of seeing through clothing, walls, etc., had finally arrived, and laws were passed all over the country to ban such naughty items before they fell into the hands of the unscrupulous. This explains why you don't see any of them around today.

Z is for Zephyr: This American 35mm camera, supposedly introduced in 1941, may have existed, but a real live model outside of the advertisement for it is yet to be found. A Leica copy, it was quite inexpensive. And so, this brings our alphabetical tour to a close. But if you have one of these, we can do business. □

Photographic's

SPEC SHEET

YASHICA FX-1



TYPE: 35mm single-lens reflex

LENS MOUNT: Yashica/Contax bayonet

SIZE: 5 23/32" long x 3 11/16" high x 2" deep (145mm x 94mm x 51mm) (body only)

WEIGHT: 24 1/2 oz. (695g) (body only)

BASIC PACKAGE: Camera, standard lens, lens cap, camera case, neck strap, battery

PRICES: Body only, \$485; with 50mm f/1.7 lens, \$600.50; with 50mm f/1.4 lens, \$645

DISTRIBUTOR: Yashica, Inc., 50-17 Queens Blvd., Woodside, New York 11377

FEATURES

Viewfinder: Eye-level pentaprism with matte focusing screen circle and center microprism spot with remaining area Fresnel lens. Frame area corresponds to area exposed by slide mount. Aperture and shutter speed display visible in viewfinder.

Shutter: Electronically controlled, horizontally run, rubberized cloth focal-plane shutter with continuously variable speeds, from 2 seconds to 1/1000. Manual speeds in marked click-stop steps, including B.

Mirror: Automatic instant-return type.

Automation: Fully automatic capability by aperture-priority method. Manual override will allow match-needle reading with preselected shutter speed by adjusting aperture.

Exposure Meter: Through-the-lens reading using CdS cell built into pentaprism. ASA range 12-3200.

Frame Counter: Additive, automatic resetting.

Film Advance: Single stroke winds film and cocks shutter. Several short ratcheted strokes can be used to wind film.

Flash Synchronization: Electronic flash (X) synch at 1/60. FP, M MF bulbs can be used at 1/30 and under. A single PC connector on body is provided.

Accessory Shoe: Contains hot-shoe contact so cordless flash units of either electronic or bulb type can be used.

Self-Timer: Lever type in front of body with 7-10 second delay. When self-timer lever is cocked, the delay is activated by the shutter release.

Battery: Uses single six-volt silver oxide (Eveready 544 or Mallory PX28). An alkaline battery (Eveready 537) may be used. Battery located in center of rewind cylinder. Access is by unscrewing crank by holding knurled ring or cylinder.

Battery Check: Button is located between pentaprism and rewind knob. Battery check lamp lights up exposure counter window.

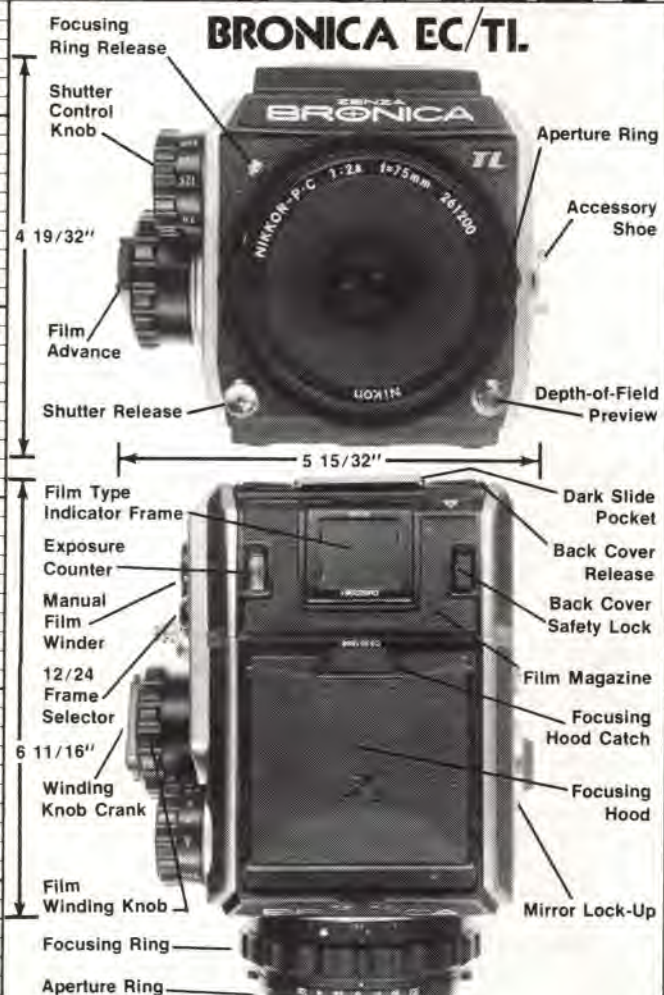
Lenses Available: Two lines of accessory lenses are available. The Yashica lenses include a 28mm f/2.8 wide-angle, a 35mm f/2.8 wide-angle, a 135mm f/2.8, a 200mm f/4, a 500mm f/8 mirror and a 1000mm f/11 mirror. A complete selection of Carl Zeiss lenses includes a 16mm f/2.8 fisheye, a 15mm f/3.5 wide-angle, an 18mm f/4 wide-angle, a 25mm f/2.8 wide-angle, a 35mm f/1.4 wide-angle, a 35mm f/2.8 wide-angle, an 85mm f/1.4 telephoto, an 85mm f/2.8 telephoto, a 135mm f/2, a 135mm f/2.8, a 200mm f/3.5, a 500mm f/4.5 mirror and a 1000mm f/5.6 mirror.

Accessories: A full range of accessories is available including many of the accessories for the Contax camera—bellows, microscope adapter, slide copier and extension tubes.

COMMENTS

The Yashica FX-1 is a very contemporary design for the amateur photographer, including many innovations to make its operation as foolproof as possible. Attention to design details has kept the camera light, compact and easy to handle. Automation has not precluded the functions associated with manual cameras—like bracketing exposures—but rather has facilitated them. The many fine Carl Zeiss lenses and Contax accessories that can be used with the Yashica FX-1 make it a highly desirable camera.

Photographic's SPEC SHEET



TYPE: 120/220 single-lens reflex with 6x6 format (2 1/4 x 2 1/4)

LENS MOUNT: Two Bronica bayonets—small for lenses to 200mm; large for 300mm and longer lenses

SIZE: 5 15/32" wide x 4 19/32" high x 6 11/16" deep (139mm x 117mm x 170mm) (body only)

WEIGHT: 64 3/4 oz. (1840g) (body only)

BASIC PACKAGE: Camera, standard 75mm f/2.8 Nikkor P.C. lens, 75mm f/2.8 Nikkor H.C., 75mm f/2.8 Zenzanon M.C. or 80mm f/2.4 Zenzanon M.C. lens, 12/24 frame film back, strap, folding focusing hood, lens cap

PRICES: Body only, \$896; 75mm f/2.8 Nikkor lens, \$268; 80mm f/2.4 Zenzanon lens, \$227

DISTRIBUTOR: Ehrenreich Photo-Optical Industries, Inc., 623 Stewart Avenue, Garden City, New York 11530

FEATURES

Viewfinder: Interchangeable focusing hood and interchangeable focusing screen; shows 88.7 percent of actual picture area. Standard focusing screen has matte center circle surrounded by Fresnel lens. Four

additional screens are available with microprism center, split image, full-field matte or matte with grid lines. Two prism finders and a magnifying hood are available in addition to the standard folding hood with magnifier.

Shutter: Electronically controlled, vertically run focal-plane shutter with stepless speeds from 2 seconds to 1/1000 on automatic; speeds from 4 seconds to 1/1000, plus B and intermediate speeds on manual. Mechanically controlled 1/40-second shutter speed in addition.

Mirror: Instant return, two-piece mirror with lock-up provision.

Automation: Fully automatic aperture priority with 13-speed LED display, under and over warning arrows at top of screen.

Exposure Meter: Through the lens with center area instant stop-down exposure readings of shutter speed on LED display, employing a silicon blue cell behind the reflex mirror. ASA range 25-3200.

Frame Counter: Additive, automatic resetting, displays frames exposed in window on film magazine.

Film Advance: Two revolutions of film winding knob advance film, cock shutter.

Flash Synchronization: Automatic switchover in flash synchronization for different types of flash (M, X, FP, F) by color-coded shutter speed designations on shutter control knob. Single PC outlet located on camera body.

Accessory Shoe: Located on side of camera body.

Self-Timer: None

Battery: Single six-volt silver oxide (Eveready 544 or Mallory PX28) operates both shutter and metering system.

Battery Check: LED display serves as battery check.

Lenses Available: A full line of Nikkor lenses: 40mm f/4 and 50mm f/2.8 wide-angle, two 75mm f/2.8 normal lenses, 200mm f/4, 300mm f/5.6, 400mm f/4.5, 600mm f/5.6, 800mm f/8 and 1200mm f/11. Also a full complement of Zenzanon lenses: 40mm f/4 and 50mm f/2.8 wide-angle, 75mm f/2.8, 80mm f/2.4 and 100mm f/2.8 normal, 150mm f/3.5, 200mm f/3.5 and 300mm f/4.5.

Accessories: 120/220 magazines in either 2 1/4 x 2 1/4 format or 2 1/4 x 1 1/2 format and Polaroid pack film back. Close-up attachments including a compact bellows, bellows with rising and falling front, extension tube set and lens reversing ring. Accessories for lenses include hoods, front and rear caps and cases. There are eyecups and diopter correction lenses for the viewfinder. Two hand grips, one for under the camera and a side grip, are available. Both leather and aluminum carrying cases are made.

COMMENTS

The EC/TL version of the Bronica brings the most current auto exposure technology to the 2 1/4-square format, single-lens-reflex type camera. Either automatic or manual operation can be had, utilizing the built-in, through-the-lens meter with any of the viewfinders available for the camera. Although somewhat larger than the earlier S2A Bronica, it is well balanced, and the controls of all functions are well placed, fast and easy to operate. The most extensive line of lenses of superb quality and a host of accessories make the EC/TL one of the world's most versatile instruments for producing top-quality photographic images with consummate ease.

Roger Buchanan: Visions of an American Landscape



Lens: 70-210 Vivitar Series 1 macro zoom Film: Tri-X, E.I. 1600

□ What strikes you first about the American Southwest, the land of such exotic names as the Pima, Apache, Navajo and Hopi, is the stark, barren landscape—mile upon mile of desert expanse, from which rise the remains of ancient but violent earth upheavals. Out of the flats one can see buttes, mesas and craggy mountain ranges, all jutting crazy-angled, as if nature had done its work here eons ago and then moved on to lush, more habitable climes. The sun beats heavily, casting long, harsh shadows on the dry, cracked earth; there's almost no reprieve except nightfall.

Roger Buchanan knows this environment well. When he first came to visually portray the native Americans and their ancestral homeland, the challenges he met were great—at first glance, there seemed to be no movement anywhere, just stillness and silence. The photographs shown on the following pages reveal the essence of this seemingly desolate land—one soon senses a rhythm, a steady yet basic chord that reverberates and touches the very core of his/her being. There's a lifebeat here in the stillness that one soon knows has been here since time immemorial—something in the quiet and solitude that reminds one of the timelessness of the earth itself. □

All photos taken with Nikon FTN and Kodak Tri-X Film (rated as indicated); exposures were unrecorded, and all prints made on Agfa Brovira No. 4 paper.

Roger Buchanan



Lens: Moon taken with 500mm Nikkor mirror with 2X tele-extender; cemetery taken with 18mm Accura
Film: Tri-X rated normally
Technique: Double-printing



Lens: 70-210mm Vivitar Series 1 macro zoom
Film: Tri-X rated normally



Lens: 70-210mm Vivitar Series 1 macro zoom
Film: Tri-X, E.I. 1600



Lens: 70-210 Vivitar Series 1 macro zoom
Film: Tri-X, E.I. 1600

Roger Buchanan



Lens: 24mm Nikkor
Film: Tri-X rated normally



Roger Buchanan



Lens: 105mm Nikkor
Film: Tri-X rated normally



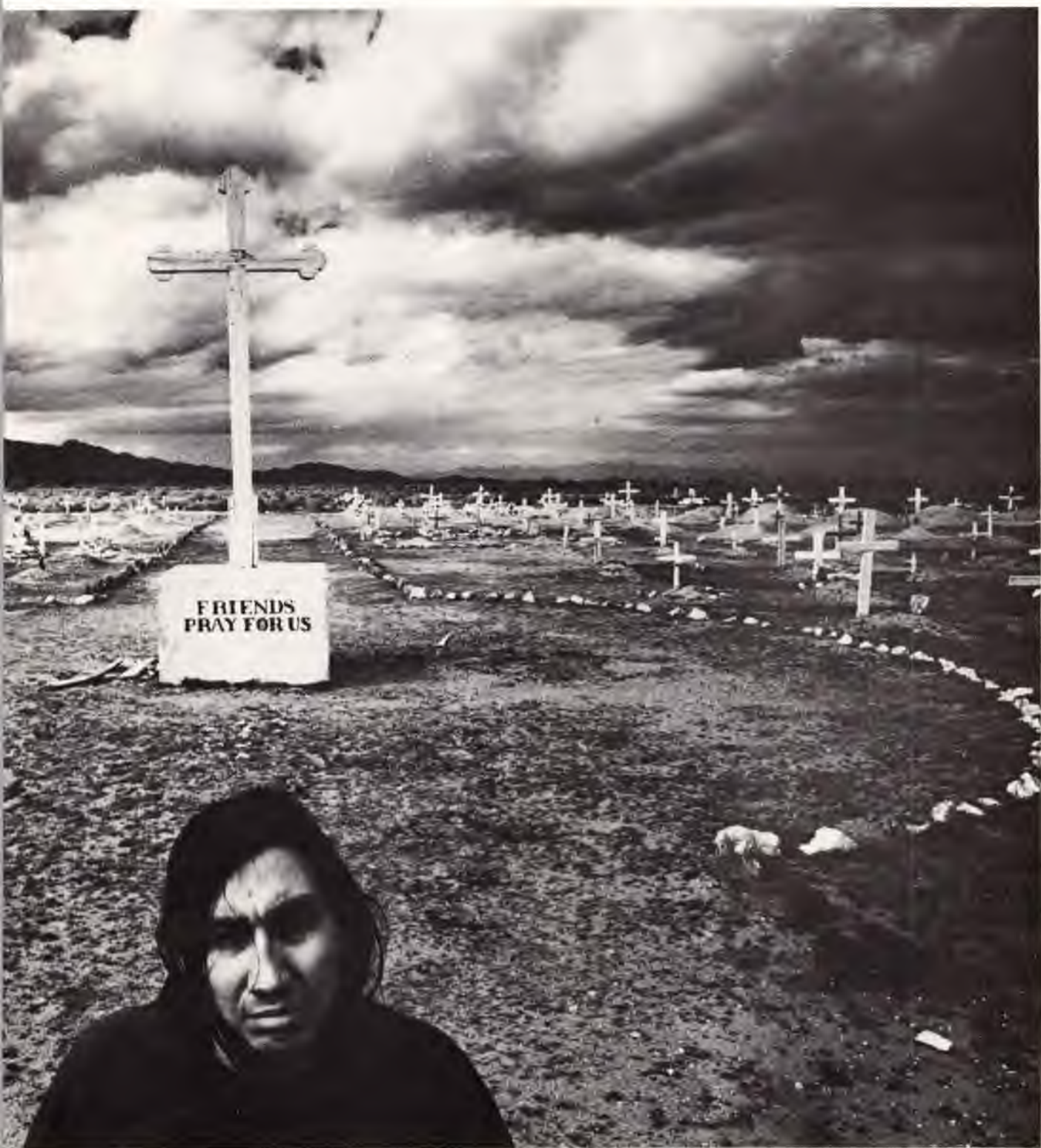
Lens: 24mm Nikkor
Film: Tri-X rated normally



Lens: 500mm Nikkor
Film: Tri-X rated normally



Lens: 24mm Nikkor with red filter
Film: Tri-X rated normally



Roger Buchanan



Lens: Truck taken with 24mm Nikkor with red filter; moon
taken with 500mm Nikkor mirror with 2X tele-extender
Film: Tri-X rated normally for truck; E.I. 1600 for moon
Technique: Photo sandwich

Photography by William Albert Allard in Montana and Hersheypark, Pennsylvania, using Fujichrome R100 film.



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VERICOLOR II TYPE S

Left: The Kodak color printing system includes a wide variety of items, which range from safelight filters to motorized drum processing equipment. In addition to the more conventional offering of color printing paper and chemistry, the Kodak library of literature contains information which should be useful to you regardless of the materials with which you work. **Above:** Probably one of the most familiar of the many support items is the test negative supplied with the *Kodak Color Dataguide*; the accompanying illustration has been made from this negative.



1



2



3



4

1. When properly used, a color proof sheet will provide you with much more useful printing information than meets the eye. In addition to acting as a guide for cropping and editing, the proof sheet also acts as a visual reference point by comparing images with known values to unfamiliar images. This all combines to save you wasted time and materials; it also makes color printing a lot more enjoyable.

2.-4. Regardless of the images you print, when a negative looks right on your proof sheet, you have then determined the necessary filtration and exposure needed to make a good color print from it and any other negative that also appears right. Simply switch the negative from the contact print frame to the negative carrier of your enlarger. Then, without changing any settings, you can expose your good color prints. If your negative does not appear quite right on your proof sheet, at least the proof sheet provides a starting point from which visual corrections can be made.

ALL PHOTOS BY THE AUTHOR.

color printing, part III

ative once you have obtained a satisfactory calculator print; simply use the exposure and filtration settings indicated by the calculator and transfer the average negative from the negative carrier to the contact print frame with the rest of the negatives you wish to proof. Now, make one exposure for all the negatives in contact with the color paper. The print that results should appear similar to photo No. 1.

If all the negatives look good on the proof sheet, simply place the ones you wish to print in the negative carrier, one at a time, and make your enlargements without changing any of the settings. Since the same light passed through this negative, if it looked good on the proof sheet, it will look good in the enlargement. If, however, some frames on the proof sheet appear too light or too dark and you still wish to print them, you can make the necessary exposure adjustments to compensate for the discrepancies *before* they are printed. If the exposures are correct but there are differences in *color* from one frame to the next, use the Kodak Print Viewing filters to assist you in evaluating the necessary filtration changes before making enlargements.

Even as you advance with your color printing technique, chances are you'll still encounter negatives that challenge the traditional ways of determining exposure and filtration—negatives that don't, for instance, contain an average blend of tones or those that defy spot-reading programs on an analyzer (see photo No. 1A). In such cases, the proof-sheet method offers a possible alternative to tedious and wasteful trial-and-error testing. By printing the difficult negatives alongside some known reference negatives, you should be able to make some useful side-by-side evaluations regarding the needed exposure and filtration corrections.

EQUIPMENT AND MATERIALS

The Kodak color printing system centers around Kodak Ektacolor 37 RC paper. This color printing material is designed to make color prints from color negatives, and it is supplied on a resin-coated, medium-weight base,

Since the resin-coated material is water and chemical resistant, washing and drying times are shortened. The paper is available in three different surfaces, as follows: "F" surface—smooth glossy finish, "N" surface—smooth luster finish, "Y" surface—silk luster finish. It is supplied in all the popular sheet sizes from 8x10 inch up to 30x40 inch. The 8x10-inch material is available in 10-sheet packs or 25-sheet packages or 100-sheet boxes. The paper can be safely handled in a darkroom using the illumination from either a Kodak No. 10 safelight or a No. 13 safelight filter for short periods of time; the No. 13 filter is preferred since it provides brighter illumination.

As you might expect, the paper is quite reliable and consistent from batch to batch. However, all color printing materials are more sensitive to high temperature and/or humidity than are black-and-white materials; it's a good idea, therefore, to maintain control over the storage conditions of your paper. When not using the paper it can be stored in the refrigerator or freezer. If you do this, however, be sure to allow sufficient time for the paper to warm up to room temperature before using. The instruction sheet which accompanies the paper includes a table of recommended "Warm-Up Times" for the Ektacolor 37 RC paper under various storage conditions. If possible, it's a wise idea to purchase your color printing paper from a dealer who refrigerates his stock; this assures you of the greatest degree of consistency from batch to batch.

The Kodak Ektacolor 37 RC paper is made to complement the Kodak color negative films like Kodacolor II and Vericolor II; it is also designed to be processed in the Kodak Ektaprint 3 chemicals. The paper will accommodate most other color negative films, however, and it is compatible with other color processing chemistry as well. The suggested list price for 100 sheets of 8x10-inch Ektacolor 37 RC paper is \$40.55.

Kodak Ektaprint 3 Chemistry is supplied in easy-to-mix liquid form, which requires simply the proper dilution according to directions for use. It is available in bottled concentrates to make one quart, one gallon or 3½ gallons of each of the three solutions as follows: Ektaprint 3 Developer, Ektaprint 3 Bleach-Fix, Ektaprint 3 Stabilizer. Total processing time at the recommended 88°F. processing temperature is less than 10 minutes and involves seven steps, including a presoak and two

wash steps. The chemistry has been designed to process Kodak Ektacolor 37 RC paper; however, it is compatible with any other type A color printing paper.

While Eastman Kodak does not offer a simple plastic tube-type processing drum of its own, the Ektaprint 3 chemistry and the Ektacolor paper can be used in the plastic processing drums made by other manufacturers. Of course, the paper and chemistry can be tray processed, or they can be processed in one of the more sophisticated, motorized Kodak processors. The chemistry can be replenished for maximum usage, and replenishment information is included with the instruction sheet. You may find single use of the chemistry to be more convenient, though, especially in a low-volume home darkroom situation. The suggested list price for the one-gallon size Ektaprint 3 Processing Kit is \$21.65.

THE KODAK COLOR SYSTEM

The Kodak color printing system is unique. Kodak offers some products which are not readily obtained from any other source, and it also provides an inexhaustable supply of literature and teaching aids. The color printing materials are just one part of a complete line of products and services, beginning with the color film and going all the way to supplies for mounting and finishing your prints. The following information will highlight some of the more interesting elements in the Kodak color printing system.

Printing Color Negatives (Kodak publication No. E-66) is an extremely helpful publication which describes the color printing process in general and takes you through a step-by-step introduction to printing color negatives. Also in this reference source is information relating to available processing equipment, color print retouching and other print finishing techniques you might like to try. Included, too, is an illustrated troubleshooting guide useful for identifying and resolving those color printing problems you may encounter. The *Printing Color Negatives* databook has recently undergone a major revision and has a suggested list price of \$2.50.

The *Kodak Color Dataguide* (Kodak publication No. R-19) is a handy package of organized reference material loaded with tables, charts, graphs, dials and up-to-date information on Kodak films and processes. This book will guide you through your color printing obstacles; not only does this manual simplify difficult tasks like determining

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have macro focus capability. An ingenious system called Scalematic on tele lenses permits easy pre-setting for accurate focus and precise measuring as well. Some wide angles have built-in filters, and one even makes flash exposure automatic! All this, plus great optics, and wonderful values.

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color printing, part III

the corrected exposure for a change in filtration, but it also seems to simplify even the basic tasks. For instance, it illustrates how to identify the emulsion side of any Kodak film, and it also provides a key for determining the type of color negative you are printing by the color of its edge stripe.

The *Kodak Color Dataguide* contains a sample negative and an original color print made from it. By printing the negative yourself and comparing your print with the sample print, you should be able to sharpen your color printing judgment. Also, an average reference negative such as this one can prove helpful in comparing two different batches of color paper to determine what changes in filtration are necessary from one emulsion to the next. The *Dataguide* has a suggested list price of \$8.95.

OTHER PUBLICATIONS

The Kodak *Kodeword* audio cassettes are a series of six instructional tape cassettes which can be played on any standard tape recorder. Each *Kodeword* cassette comes in its own folder with a written instruction booklet. The booklet describes, in general terms, the technique that the recorded cassette explores in detail. These cassettes will talk you through a variety of techniques including the actual processing of your own color prints; simply listen to the narrator and follow the directions as they are given to you. The cassettes will not only help to familiarize you with a new process, they assure you that the process will be carried out accurately from start to finish every time you do it. (For a complete description of the *Kodeword* tapes see "Club Close-Ups" in the January, 1976 issue.) The suggested list price for each cassette is \$6.85.

The *Kodak Color Print Viewing Filter Kit* consists of six cards which represent one each of the primary colors (red, green and blue) and one each of the complementary colors (cyan, magenta and yellow). Within each card there are three mounted filters of different densities; these filters are used to help you evaluate your color prints. By viewing your prints through the ap-

propriate filters, you can approximate the effect of changing your filtration and making additional prints. This not only helps you to evaluate the correct changes, but it may reduce your wasted effort as well. The *Viewing Filter Kit* comes with an instruction sheet and is packaged in a vinyl wallet. Corresponding filter corrections are printed directly beneath each viewing filter. Provision is made for evaluating prints from negatives as well as from slides. The suggested list price for the Kit (Kodak publication No. R-25) is \$8.

The *Index to Kodak Information* (publication No. L-5) is revised annually and lists all the available Kodak literature including books, guides, pamphlets and other related material. The *Index* is available at no charge by writing: the Eastman Kodak Company, Department No. 454, 343 State Street, Rochester, New York 14650.

The *Kodak Photographic Products* catalog (Kodak publication No. P2-1) is a 242-page volume listing all professional products, materials, equipment and supplies sold by Kodak. Brief descriptions of each entry help explain the product and its purpose. Also listed are the Kodak catalog number and the suggested list price. This information can be helpful to you when communicating with your dealer to place an order for a Kodak product. The catalog costs \$1 and is listed in the *Index* (publication No. L-5); it may be available from your local dealer. If not, contact Kodak at the address given.

COSTS

The combined cost for an 8x10-inch print is approximately 91¢, based on the suggested list price of the materials as follows: Kodak Ektacolor 37 RC paper, 100 sheets = \$40.55 = 40½¢ per 8x10 inch print; Kodak Ektaprint 3 chemistry, 43 prints at \$21.65 per gallon = 50¢ a print.

While it's probably beyond the needs of most home darkroom workers, the Kodak Rapid color processor, Model 11, provides a useful alternative for the large-volume user. The temperature-controlled, motorized processing unit will handle up to 11x14-inch paper and has a suggested list price of \$375. The Kodak No. 13 (amber) safelight filter, which is designed for Ektacolor paper and is compatible with other color papers has a suggested list price of \$7.50 for the 5½-inch-round size. All of the Kodak products mentioned are available through your local dealer, who can, of course, provide you with actual costs based on your own specific needs. □



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GALLERY '76

□ The photographs on these pages were taken by photographers of professional caliber. In order to provide these talented individuals with a forum for displaying their best efforts, we present this month's Gallery '76. If you feel your photographs are of similar caliber, send us the evidence (along with a stamped, self-addressed return mailer—in case we don't agree). There is no limit to the size or number of photographs you may submit to Gallery '76, but only black-and-white prints will be accepted. Your name and address and all pertinent data: camera make, lens, film, exposure, special printing techniques, etc., must be printed on the back of each picture. Also, in any photograph in which a person or persons can be identified, the photograph must be accompanied by a signed release from each recognizable individual. PhotoGraphic will pay \$25 for each picture published. Prints are accepted for one-time use and will be returned after publication. □

1. Graceful curving lines provide dramatic framing for the cloaked figure at center of R.H. Jones' photograph. Picture taken with Nikon FTN and 50mm Nikkor lens with Kodak Tri-X Film rated at E.I. 250, exposed for 1/125 at f/4. Negative developed in Dektol, then copied onto litho film and recopied to make a new negative, which was printed on DuPont Varigam paper using a No. 4 filter.

2. David Lundquist accentuated the zig-zag patterns and linear design of this waterfront warehouse scene with high-contrast techniques. Photo was made with an Asahi Pentax H and 55mm Takumar lens; Kodak Plus-X Film exposed for 1/60 at f/11. Print of original was rephotographed on Kodak High Contrast Copy Film, and negative printed on Agfa No. 6 paper.





3

3. Martin S. Silverman emphasized the impact of lines and rectangles of this building to obtain abstract effect. Ilford FP4 Film exposed with Canon FTb and 20mm Canon lens for 1/30 at f/22; print made on Agfa No. 6 paper.

4. An unusual angle juxtaposing building and a ring of lights against the nighttime sky makes this a graphic and somewhat futuristic image. Bruce A. Richards used a Toyo 4x5 view camera and 180mm lens to expose Plus-X film for one second at f/11; print made on Kodak Polycontrast Rapid paper.

5. The repeating shapes of bridge structure and its wire mesh covering effectively frame the subjects of Kenneth A'Costa's composition. Photo made with Plus-X film exposed for 1/250 at f/11 with Canon F-1 and 35mm Vivitar lens.



4



5

calculator in the darkroom

how a
mini-abacus
can save
printmaking time

by dick claassen
and jim johnson

So you've just bought a brand-new pocket calculator, and you say you're having a great time with it. Have you found that the lightning quick calculating power now at your fingertips has helped you uncover a colossal overdraft in your checking account? And does your new and nifty little calculator tell you that your new and thrifty little economy car is getting only 11 miles to the gallon?

Well, don't despair, my friends. Poor gas mileage and bank overdrafts are not the end of the world. But wasted time in the darkroom is! We've all had a good case of the darkroom blues at one time or another. Making a really fine print is a time-consuming and all too often tedious process.

But now there's a neat way to take the sting out of those printing sessions. You guessed it. The same little pocket calculator you use to balance your checking account will save you immeasurable time in the darkroom.

Let's assume you have printed a 4x5 (either color or black-and-white) and are so happy with it, you want to make an 8x10. If you are like most of us, you will crank up the enlarger head



and then proceed to make a series of test strips, a time-consuming and rather primitive way of finding the new exposure time.

PRINCIPLES INVOLVED

But there is an easier way, and the method is as old as Sir Isaac Newton's experiments. Newton discovered that light behaves in predictable ways. One of his more important discoveries was that light intensity varies according to the inverse square of the distance.

Before you get upset by this seemingly complex bit of mathematical gobbledegook, consider a simple mental exercise. Suppose a light bulb is placed exactly one foot from a target. If you place a light meter on the target, you could measure the amount of light falling on it. Now move the light bulb three feet from the target. You'll now find that the light meter indicates only $1/9$ as much light. Why? Because that's the way light behaves. The inverse of three feet is $1/3$, and the inverse squared (squared means times itself), is $1/3$ times $1/3$ or $1/9$. The amount of light falling on the target at three times the original distance is $1/9$ as much.

This little bit of knowledge really comes in handy when you wish to find a new exposure time. The formula you use to do this is:

$$\left(\frac{\text{New Distance}}{\text{Old Distance}} \right)^2 \times \text{First Exposure Time} = \text{New Exposure Time}$$

Another way of saying it would be, new distance divided by old distance times itself times the first exposure time equals the new exposure time.

APPLICATIONS

Now let's look at a specific situation. Suppose you've made a 4x5 enlargement at six seconds. How would you find the exposure time for an 8x10?

1. Tape measure, simple pocket calculator and the filter factor tables are all you need to make your life easier in the darkroom.

2. In order to determine the exposure time for a new magnification, first measure height of enlarger head for original magnification.

3. By determining height of enlarger head for new magnification and using the accompanying formula with pocket calculator, new exposure time can be easily determined.

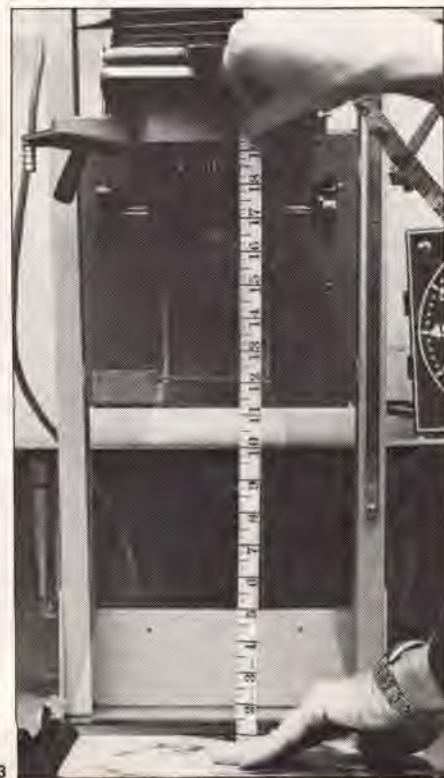
Simple. Use an ordinary tape measure to find the distance from the lensboard to the easel—say it's 8 $\frac{3}{4}$ inches. Converting this to a decimal value would give 8.75 inches. You need measure only to the nearest $\frac{1}{4}$ inch. Now crank up the enlarger head until you're satisfied with the cropping on the easel. Measuring this new distance, you find it to be 19 $\frac{1}{4}$ inches or 19.25 inches. Now divide 19.25, the new distance, by 8.75, the old distance on your pocket calculator. The answer is 2.2, although you're not really concerned with this figure. I mention it only to illustrate the process. Now multiply 2.2 by itself. On most calculators this can quickly be done by pressing the "times" key and then pressing the "equals" key. The answer is 4.84, but again you are not really interested in this result. To find the new exposure time, multiply 4.84 by six seconds. The new exposure time is very close to 29 seconds.

The whole process takes far less time to execute than it does to tell, and I'm sure you can easily see the merits of the system. Suppose you want to make a poster. If you have ever tried

this little exercise, you know that there can be endless fiddling with horrendously long exposure times. Well, your calculator will tell you the exposure time in just a bit longer than it takes to make an 8x10 enlargement. You would first make an 8x10 print and note two things—the exposure time and the distance from the lensboard to the easel. Let's say the printing time is eight seconds, and the distance to the easel is 20.5 inches. When you turn the enlarger head around and project the image on the floor, you'll find the new distance to be four feet, seven inches. Now convert this distance to a decimal value by multiplying four by 12 inches—which gives you 48 inches—then add seven inches to that. The new distance is 55 inches. Now divide 55, the new distance, by 20.5, the old distance. Multiply this answer by itself, and then multiply it by the old time of eight seconds. Did you get 57.58 seconds? See how simple it is?

ADDITIONAL USES

Are you a subtractive color freak? If so, then you know how important it is to be able to accurately determine a new exposure time. Trial and error gets



ALL PHOTOS BY THE AUTHOR

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PEP-3

calculator

to be both time-consuming and expensive in color printing.

Incidentally, with your calculator helping you it's no longer necessary to restrict your 4x5 color test patch to a localized area on 8x10 paper. Now it's possible to make a 4x5 of the *entire frame*, evaluate it for color saturation and density, and then use your calculator to determine the new exposure time for an 11x14 or for any size in between.

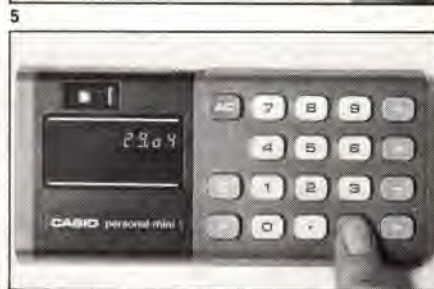
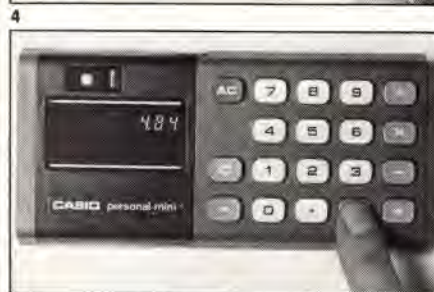
If you would like to go from a larger print to a smaller one, use exactly the same formula. Remember, though, that you will come out with a *shorter* exposure time rather than a longer one. Newton didn't know anything about variable contrast filters, but if he were around today, you could be sure that the genius of planetary physics would have come up with a labor-saving law regarding filter behavior.

But even though Newton isn't here to guide us, Eastman Kodak is. Through careful manufacturing techniques, they have introduced consistency into their Polycontrast filters. This means that the density of the No. 4 PC filter I own has exactly the same density as the PC filter you own.

So, you say, "Big deal! What does that mean to me?" Well, it means that if you know the filter factors, (density expressed as a number) you can quickly determine filter printing times.

Suppose you have printed an 8x10 print with no filtration and decide it needs a little more snap. You want to increase contrast through the use of a high contrast filter. From experience you know that when you place a filter into the enlarger's optical system, your new print will require a longer exposure time. How do you find that new exposure time? You could use the old test-strip trick, of course, but that's time-consuming. A simpler, more direct way is to determine the filter factor for the specific filter used, and then by using your calculator, multiply the first printing time by the filter factor. In the twinkling of an LED, you have computed the new printing time.

Examine the accompanying "Polycontrast Filter Factor" table. Note that these factors are accurate for a first printing time of eight to 25 seconds. Extremely long printing times are subject to "reciprocity effect," but if you keep the first printing time within the eight- to 25-second range, the reciprocity effect won't plague you.



4. Plugging measurements into formula gives: new height + old height = $19.25 + 8.75 = 2.2$.

5. Squaring the answer just obtained gives: $2.2 \times 2.2 = 4.84$.

6. Multiplying original exposure time by this result gives 6 seconds $\times 4.84 = 29.04$ seconds—the new exposure time for the new magnification—which can be rounded off to 29 seconds.

Now take a look at a specific example: you've made a print at 13 seconds. To boost the contrast you throw in a No. 2½ PC filter. The table tells that the filter factor is 1.59. Multiplying 13 seconds by 1.59 gives 20 seconds—your new printing time. Disgustingly simple, isn't it?

But why stop with PC filters? The principle will work equally well with subtractive color printing filters. Every manufacturer of color heads and filter sets includes a filter factor table for all major increments. Examine the accompanying "Kodak Color Filter Factor" table. If you *add* a filter value or values, *multiply* the old exposure time by these factors. To *subtract* a filter value or values, *divide* by the filter factors.

For example, suppose you've made a print for nine seconds, and upon examining it, decide it is too red. To correct this you decide to add 10 yellow and 10 magenta. Upon consulting the Kodak table, you find 10 yellow to have a filter factor of 1.1 and 10 magenta to have a filter factor of 1.3. The new time, then, is nine seconds *times*

KODAK COLOR FILTER FACTORS

Filter	Factor
05Y	1.1
10Y	1.1
20Y	1.1
30Y	1.1
40Y	1.1
50Y	1.1
05M	1.2
10M	1.3
20M	1.5
30M	1.7
40M	1.9
50M	2.1
05C	1.1
10C	1.2
20C	1.3
30C	1.4
40C	1.5
50C	1.6

NOTE: This information was reproduced from the Kodak booklet *Printing Color Negatives*, No. E-66.

POLYCONTRAST FILTER FACTORS

Filter No.	Factor
1 1/2	1.5
2	1.38
2 1/2	1.59
3	2
3 1/2	2.5
4	5

NOTE: The filter factor for the No. 2 filter is less than the factor for the No. 1 1/2 filter. The filter factors were determined by interpreting the Enlarger Computer of the Kodak darkroom *Dataguide*, R-20

7. To determine exposure time with a Polycontrast filter, simply multiply the original exposure time by the filter factor as given in this chart.

1.1, times 1.3 = 12.87 or 13 seconds.

How do you determine exposure time if you subtract filters? Simple. Suppose you've made a print at 12 seconds, and upon evaluating it, decide it is too cyan. To correct this, subtract 30 yellow with a factor of 1.1 and 30 magenta with a factor of 1.7. The new time, then, is 12 seconds divided by 1.1, divided by 1.7 = 6.4 seconds or about 6 1/2 seconds.

Bear in mind that filter factors vary among manufacturers. Consult the instruction book that came with your equipment for proper filter values.

The pocket calculator can be of tremendous help to you once you get into the habit of using it effectively. Calculators are so inexpensive nowadays that almost anyone can afford one. It's not necessary to purchase an expensive model; the very simplest design with the four basic arithmetic operations and a floating decimal is all you'll need. A calculator of this type can be purchased for about \$10.

We wouldn't dream of suggesting that you cut the filter factor tables out of PhotoGraphic, but it's a simple matter to copy the tables and post them next to your enlarger for handy reference. Keep a tape measure handy and have your calculator within easy reach. Before you know it, your darkroom blues will simply fade away. □

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USE LENSES FOR PERSONAL EXPRESSION

AN INTERVIEW WITH FRANK BEZ



PM: The lens interchangeability feature of systems cameras has made it possible for working photographers to use different focal lengths as a means of creative expression. What does lens interchangeability mean to you as a working photographer?

BEZ: Well, for me it means the ability to get a lot of "business" in a picture in one particular situation or to narrow the view in another. There are many reasons for using different lenses, and we have to address ourselves to these reasons on the basis of the particular focal length that we're talking about.

PM: Let's say that lens interchangeability didn't exist. Let's say that, as with the old twin-lens reflex cameras, you were limited to one focal length. How would your creative thinking be affected by only being able to work with one focal length?

BEZ: I think that every photographer should labor with having only one lens at his disposal. I think using a single lens for one year would be ideal because, given that discipline, you would be forced to address yourself to designing within the given format.

PM: Given the 35mm format, let's say that the only focal length lenses available were the 35mm, 50mm and 135mm. How would this limited lens selection affect your creative thinking?

BEZ: I'd be perfectly happy with those three lenses. I'd probably use the 50mm the least unless I happened to become fascinated with very low-light level photography because of the high lens speed of many "normal" lenses. However, in my own work, I consider the 35mm lens as my "normal" focal length, especially for photographing people. It's just slightly "wide," and as

a result I can apply distortion or not at my discretion. If I move in tight and jam the frame a bit, I can stretch things around, especially when I'm doing fashion or full-figure photography.

On the other end, I'd say that the 135mm is a bit on the "long" side for me. I like to be able to whisper to the subject, and the 135mm puts me a little too far away to do that with reasonable success. However, it has beautiful "compacting" capability, and it is a good head-shot lens.

PM: You seem to be speaking strictly from the studio-type situation.

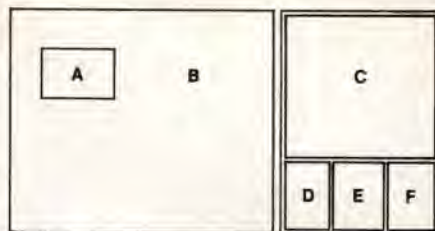
BEZ: Not necessarily. Let's apply those three focal lengths to scenics. Again, I would say that the 35mm and the 135mm lenses would be ideal, and the 50mm would be the least ideal, because I'd want to distort or compress what I see. I'd seldom want to let it be just as I found it.

PM: What's wrong with reality?

BEZ: Nothing, really. But reality, as such, presents a limitation where I can't express my own feelings about a particular subject. In the case of scenics, I feel that I want to bring something of myself back to the viewer of my photograph. So I'm bringing back my own personal interpretation of what I saw. That's where a battery of lenses really gives me the ability to express myself.

PM: How about the photojournalist, though, who's dealing with total reality? Wouldn't he, by virtue of using the different perspective-producing effects of lenses be distorting reality and making people see something that was not there?

BEZ: If he's truly a reporter, and not doing essays, then you're absolutely



A. Photo taken of Pineapple Hill, in Maui, Hawaii. Nikon F2 fitted with a 16mm Nikkor full-frame fisheye lens. Film was English Kodak Kodachrome-X, 1/2 at f/8, photographed at dawn.

B. Davia Halperin, actress, photographed with a Nikon F fitted with a 105mm Nikkor lens. Kodachrome-X, 1/30 at f/5.6. Photograph was taken in the studio, using a north light window with a black flat on one side to darken the shadow side of the model's face.

C. Susan Clark, actress, photographed with a Nikon F2 fitted with a 35mm Nikkor lens. Kodachrome-X, 1/250 at f/8. Photo was taken in late afternoon sunlight at a dry lake bed with natural fill lighting.

D. Two transparencies were copied as a sandwich using a Nikon bellows and slide copier, plus 55mm Micro Nikkor lens for this photo of Brande Grant. Kodachrome-X was exposed for 1/2 at f/6.3. Illumination was furnished by a 1000-watt quartz lamp with a dichroic filter. The head was photographed with a Nikon F2 fitted with an 80-200mm Nikkor zoom using English Kodachrome-X, 1/60 at f/5.6. The scene was photographed with a Nikon F2 fitted with a 300mm Tessar fitted with a No. 3 sparkle filter with Kodak Ektachrome-X film, 1/125 at f/5.6. A yellow filter was also used for the foggy day exposure.

E. Susanne Benton, actress, photographed with a Nikon F2 fitted with a 20mm Nikkor wide-angle lens. Kodachrome-X was exposed at 1/125 at f/6.3, using late afternoon light.

F. Nancy Curry was photographed with a Nikon F2 fitted with an 80-200 Nikkor zoom lens. Ektachrome-X film was exposed at 1/250 at f/6.3, using the selective diffusion technique described in text.

1. David Gates, singer/composer, was photographed with a Nikon F2 fitted with a 20mm Nikkor wide-angle lens, Kodachrome-X, 1/500 at f/6.3. Photographer ran alongside of subject as described in text to make the photo.

2. Karen Jensen, actress, was photographed with a Nikon F fitted with a 105mm Nikkor lens. Film was Kodak Kodachrome Type A, 1/30 at f/5.6, using a 2000-watt quartz light bounced back from a large Larson Reflectasol. Key light was a 1000-watt quartz used as a backlight.

3. Catalog illustration was photographed with a Nikon F2 fitted with an 80-200 Nikkor zoom lens. Kodachrome-X was exposed for 1/2 at f/16. Camera was mounted on a tripod; lens was zoomed during exposure.



All black-and-white photos are knockdowns from color transparencies; original film as indicated in captions



INTERVIEW WITH FRANK BEZ

right. As I said, the 50mm high speed lens is very appropriate for low-light level photography. Frequently, that's a part of photojournalism. But for me, the "normal" 50mm lens doesn't allow me to add my own interpretation to the photograph, and that's what I do because that's my line of work. I'm an illustrator. I'm bringing people my feelings about what I'm photographing. From my own point of view, an illustrator is someone in the commercial world who is hired to represent a feeling about a subject photographically.

PM: Given the fact of interchangeable lens capability, how does one take one's normal vision and use it to see in terms of wide-angle or telephoto or anything else in between? How do you decide which focal length lens you want to use after you decide upon a particular scene as being worthwhile in photographic terms?

BEZ: Well, first of all, there isn't any right or wrong way to photograph a scene. There are many photographs in any given scene, and it depends on what initially attracted you. Let's say you've come upon a meadow. It goes back into rolling hills. There are some wild flowers growing, and farther back in the meadow there's a really nice, twisted oak tree. And then there are the hills. Well, in that given scene and from that same vantage point, there are literally hundreds and hundreds of photographic possibilities.

You could start with a very wide-angle lens and move in quite close to capture the wild flowers in close detail and also show the whole environment surrounding the background. Or you could isolate one of the wild flowers, or you could isolate the tree. Either that, or you could find pure tone changes and get into graphics by stacking up the various planes with a long telephoto. Which way is right? There isn't any right way.

PM: Are you saying you distort your normal vision by using a whole battery of lenses, viewing the scene until something happens and then taking the photograph?

BEZ: No. I would say that it is an intuitive process. You are attracted to something, and you realize that something in the scene should be isolated. The photographic experience is one of collecting a lot of impressions. Let's stay with the example of shooting scenics—a favorite subject of mine—you're driving down a country road; you see all of these images, and they



1. Catalog illustration was photographed with a Nikon F2 fitted with a 135mm Nikkor telephoto lens. Kodachrome-X film was exposed for 1/500 at f/6.3.

2. Jethro Tull at La Scala photographed with a Nikon F2 fitted with a 16mm Nikkor full-frame fisheye lens and Kodak High Speed Ektachrome Type B Film. Exposure was 1/30 at f/6.3, with two 1000-watt quartz lights bounced from two large Reflectasol umbrellas.

all bombard you as you look around. So there are literally thousands of images, and then one of them sparks, and you discover a lovely relationship. So you start analyzing it, and then you start selecting, selecting and selecting until you can narrow it down to the point where you want to take a photograph and do.

Now, you have captured what attracted you in the first place. But there's a secondary phase to this creative process. I call this *directing*! On the basis of your previous experiences with things, you say, "Now, to shoot in that meadow I could really show people the magic of what I see, but I will need a long telephoto lens to shoot the grass and to get it all in focus so I can

really give them the feeling of what I saw when I was driving down the road. I saw the grass in front of me, and I saw the sheep in the background, so I'll stack them up with a long telephoto because I visually zoomed in for a moment of focus."

PM: Awareness, then, is an important part of lens selection.

BEZ: Absolutely. What you are doing is working on the basis of past experience. You're drawing on your experience to direct the proper selection of lens and angle. You will never take the second, creative step of letting the lens direct the scene if you haven't had the previous experience to guide you.

PM: Using the concept of letting the lens direct the scene, let's take a look at all of the lenses you use and tell us how you would use those given focal lengths to direct scenes and concepts.

16mm

BEZ: This is an especially exciting lens to use in scenic work, because I'm able to distort the view of the horizon. From time to time I come across a scene which is so desolate, so marvelous and simple in design—with maybe a single element—that I want to give that element the feeling that it's the whole world I'm looking at. This lens will do that quite nicely. Another thing is that I can place some things almost out of proportion in scale—in the foreground—and capture a totally beautiful expression of the background.

20mm

BEZ: There's an incredible difference in effect between the 16mm lens and the 20mm lens. Distortion is not as great. It is far more controllable. It is, as far as I'm concerned, the illustrator's or designer's lens. It offers an infinite number of creative possibilities. Although it does require careful arrangement of the elements within the frame, the final arrangement can be just superb. I use it when I'm actually on the run and have to work with either a group or in a reporting situation where things are so fluid that I literally don't have time to focus. I can simply point the lens and capture what's going on.

Another great advantage to using a lens this wide is that it allows you to shoot as you are running with the camera. By wrapping your neck strap around your right hand, as well as your neck, you can use your arm as a shock absorber and run along with your subject. Try to keep the camera an inch or so from your face. You'll find that you can hold your frame on your subject and even keep the horizon straight in your finder.

35mm

BEZ: This is my normal lens, especially when photographing people. It gives a relatively normal perspective, yet I can create a bit of distortion if I move in very close to my subject. It still requires precise arrangement of my subject because it's difficult to throw the background enough out of focus if I want to isolate something within the frame. It is my most used lens.

50mm

BEZ: The only reason I'd use this particular focal length would be to avail myself of its inherent high speed. I'd use the lens in situations where candid shots are wanted. Recently, I put a 50mm lens on my camera and did a picture story of my daughter who was leaving home for the first time to attend college. I was able to shoot inside, outside, in the car and in the airport because the high speed 50mm lens was able to handle a wide-ranging variety of lighting conditions. It's perfect for that. However, I do wish it were a little wider, say 40-45mm with the same high speed characteristics.

MACRO

BEZ: Although the macro lens is about the same focal length as the standard 50mm lens, I prefer its use for a strange reason—it has a built-in lens shade. The front element of a macro lens is usually deeply recessed, and I can use it in the rain without getting

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splashes on the front element. Also, I find it critically sharp and ideal for ultra-close-ups and copying purposes.

85mm

BEZ: This is what I consider my first step into longer focal lengths. I like it very much for various illustrative purposes. It'll do a quite acceptable head shot, and it's also very nice for some $\frac{3}{4}$ views. Usually, it's quite fast. With the lens wide open I can selectively drop out background focus to a high degree. I don't use it in any special way. I only use it where the subject distance dictates a short/long lens.

100-105mm

BEZ: There's no secret that I, along with many other professionals, find the 100-105mm to be ideal portrait lenses. You can move in very close for a head shot that has the right relationship as far as photographer-to-subject distance. You can whisper, which has a more subtle, personal impact on your subject. There's practically no distortion because the perspective of these lenses is superb. Background focus can also be selectively controlled to a greater degree. They are the ideal portrait lenses in every respect.

135mm

BEZ: I would use the 135mm when I need a fairly long telephoto lens that had to be handheld. Although I do not generally prefer it for portraits—it puts me too far away from the subject—I would use it for action and certain types of sports photography where I'd want to do some panning of a moving subject. It is also ideal for photographing dancers or other moving subjects where I'd want to get a little action blur. It has good sharpness, is comfortable to hold and produces good subject perspective.

ZOOMS

BEZ: I was very slow in obtaining one of these lenses for my personal use. However, over the past few years these lenses have evolved to a high optical degree. They are now excellently made and possess amazing sharpness. Additionally, above and beyond their ability to give motion effects—zooming during actual exposures—and to selectively compose a subject while remaining at the same subject-to-photographer distance, I began to discover some really nice possibilities. For example, I use a zoom lens as a selective diffusing device. To do this I have to give up the lens' ability to compose from any distance in relation to the subject. That is, I select



1. Elektra butterfly was photographed with a Nikon F fitted with a 50mm Nikkor 1/1.4 lens. Camera was loaded with Kodak Kodachrome Type A Film, and an exposure of 1/60 at f/5.6 was made. Two 500-watt spotlights were used to backlight the flowers and butterfly. A 2000-watt spot was aimed at the paper background.
2. Catalog illustration was made with a Nikon F2 fitted with a 500mm f/8 Nikkor mirror lens and loaded with Kodachrome-X; exposure was 1/250 at f/8.

a focal length and move in or away from the subject to compose. However, the selected focal length would be determined by the actual amount of diffusion I wanted.

To obtain the diffusion, I apply a little Vaseline around the outside of a clear filter, such as the skylight or UV type. The Vaseline is applied a dab at a time around the outer circumference of the filter, say about $\frac{3}{8}$ inch into the filter. Then, the filter is affixed to the front of the zoom lens. As I zoom into longer and longer focal lengths, the diffusion increases to a point where I can obtain a beautiful, silky, almost foglike effect. I find this particularly useful when there's a certain crispness to the light that is too harsh and revealing when photographing a certain subject. With diffusion filters I can obtain a limited selection of effects. However, with a Vaseline-treated filter and a zoom lens I can have the option of many degrees of diffusion by moving the zoom ring from very short to very long focal lengths.

300mm

BEZ: Unless you've seen a really superb head shot done with the 300mm lens, you can't imagine how beautiful it can be. Admittedly, I can't whisper to my subject but, by developing a way to communicate with my subject by hand signals, I've overcome this. By virtue of the very long focal length, I can actually focus in on a single plane of the subject's face to achieve incredible effects. I also use the 300mm lens, handheld, for scenics, photographing airplanes, surfing shots or any other action subject where I can't get close enough to compose and direct the image I want. If I can't utilize a tripod in certain situations, say on a backpacking expedition, I steady the lens by sitting down and resting the lens on my drawn up knees. It's a great lens for very long perspective and illustration. It allows an infinite number of subjects to be photographed, handheld, and I can select the depth of field I want.

500mm MIRROR

BEZ: This is a unique telephoto lens. It's light, yet has a high degree of magnification, plus ease of portability. Additionally, because I'm limited to one f-stop, usually f/8, depth of field can be difficult to control. On the other hand, limited depth of field can be an asset. For example, I photographed a butterfly in a field with a 500mm mirror lens (Ed. note: see cover illustration). I could have used a macro or a shorter telephoto lens to photograph the butterfly; but the 500mm mirror lens with its limited depth of field and unusual perspective-compacting effect allowed me to use a single plane of focus to create a posterlike sketch effect.

The 500mm mirror lens can also be used to isolate elements within a

scene. It's a beautiful lens for photographing water or reflections in water because I can move in very close and isolate some beautiful gems that we frequently miss in nature.

When working with this lens I usually attach it to my tripod—not the camera body—and then I sandbag the lens by placing the sandbag directly over the lens. This allows me to use fairly long exposures without danger of shake or vibration ruining my critical focus.

* * * *

PM: For those readers who don't have this full complement of interchangeable lenses or lens interchangeability at their command, the illustrations used in this article indicate some of what you've been talking about. However, isn't it true that most of the illustrations seen here could have been done with different focal length lenses as well?

BEZ: Oh sure, it's what we touched on a little earlier—about there being no right or wrong way to photograph a scene. It's like having a complete woodworking shop at your disposal. One can make a neater cabinet. That doesn't mean to say that if you put your mind to it you couldn't put together a really fine cabinet with only a handsaw, a hand drill and patience. It's just that with all of these lenses available to a photographer, the job becomes simpler—the "cabinet" is *easier* to construct.

PM: If there's one final word that you'd like to say to everybody, about lens interchangeability and the desirability of lens interchangeability, what advice would you give photographers with a limited lens battery at their disposal? How should they go about adding lenses to expand their own photographic horizons?

BEZ: I think I'd have to return to the basic process of photographic growth. The first thing one should do is to start selecting images in a given scene—even if you do not have a full lens battery at your disposal—and to try to isolate elements within that scene. If at all possible and even if it means borrowing a lens, those elements should be recorded.

You've got to go out and shoot, shoot, shoot and then see what your results are with *one* particular lens. When you reach the point where you can say, "I could have done better with a slightly longer lens," then you've taken the second and most important step in the creative photographic process. You're now well on the road to self-expression and photographic self-awareness. □

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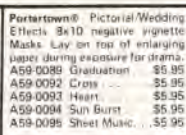
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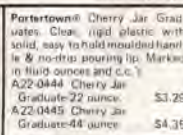
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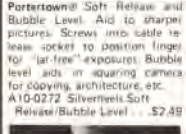
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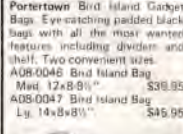
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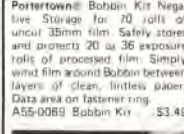
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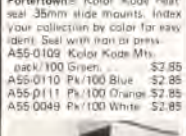
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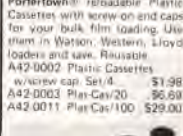
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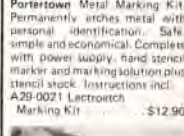
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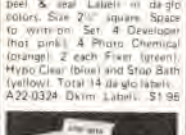
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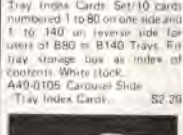
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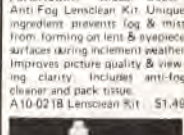
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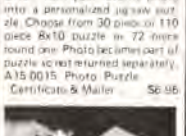
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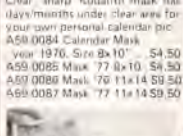
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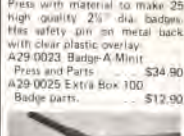
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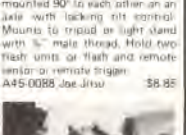
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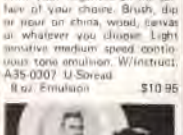
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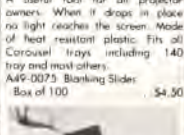
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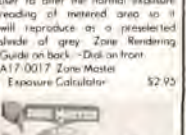
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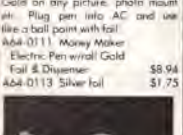
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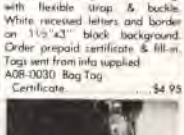
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BLUEPRINT SERIES

HOW TO CONSTRUCT A FILM WASHER

BY WALT SENG

PROJECT: To construct a film washer for roll films on reels.

PURPOSE: To assure efficient removal of hypo from film via syphon action and to permit washing a great number of rolls of film at one time.

EQUIPMENT: (For a 24-inch-deep film washer) 1. Four-inch diameter by 24-inch long PVC sewer pipe (1); 2. 40-inch length of $\frac{3}{4}$ -inch PVC plastic pipe (1); 3. Four-inch diameter coupling for PVC sewer pipe (1); 4. $\frac{3}{4}$ -inch, 90° PVC fittings (3); 5. "Instant Repair Hose Coupling" for $\frac{3}{8}$ -inch rubber hose (Lafayette No. A-4651-C male end) or similar fitting (1); 6. $\frac{3}{8}$ -inch rubber hose; 7. 30-inch long stainless steel rod; 8. Plastic coffee can lid at least five inches in diameter; 9. PVC plastic pipe cement; 10. Drill with a one-inch bit; 11. Sandpaper; 12. Scissors; 13. Pipe cutter; 14. Pliers.

ASSEMBLY GUIDE: Prepare all plastic parts for construction by sanding all rough edges, especially those on the four-inch pipe. Check the inside of the pipe for burrs or rough seams. PVC cement will be needed only to attach hose connection and one 90° fitting at the base of the tank. All other connections are simply pushed together.

CONSTRUCTION: Refer to photo No. 1 for parts familiarization. Measure the inside diameter of the four-inch coupling and cut out a circle to that size from the coffee can lid (see photo No. 2). This will become the bottom of the tank after inserting into the coupling (see photos No. 3 and 4). The cutout is now attached to one end of the four-inch pipe. Next drill a one-inch-diameter hole just above the midpoint of the coupling. A $\frac{3}{4}$ -inch off-center mark will help guide you. Drill through the coupling and the pipe (see photos No. 5 and 6).



Completed film washing tank.



1. Parts from rear, left to right: four-inch coupling for sewer pipe; four-inch sewer pipe; 20-inch long by $\frac{3}{4}$ -inch plastic pipe; 18-inch and two-inch-long pipe. Front: hose coupling for $\frac{3}{8}$ -inch rubber hose (part at extreme left is not used); three, $\frac{3}{4}$ -inch 90° plastic fittings; five-inch diameter plastic coffee can lid.

Sand all rough edges resulting from the drilling. Now, using the four-inch pipe as a form, sand one of the 90° fittings so that it will fit flush with the coupling over the hole you just made (see photo No. 7) and glue it in place over that hole (see photo No. 8). Use lots of glue; you can wrap tape around the fitting and coupling to hold them tightly while the glue cures (about four hours).

Now, using the one-inch drill bit, drill a hole near the top of the tank (see photo No. 9) and put the hose fitting into the hole (see photo No. 10). This fitting should be inserted flush with the inside of the tank. When dry, sand smooth.

With the pipe cutter, cut the 40-inch piece of $\frac{3}{4}$ -inch plastic pipe into lengths of 20 inches, 18 inches and two inches. Assemble as shown in photo No. 11.

Attach hose to upper fitting (see photo No. 12) and push $\frac{3}{4}$ -inch pipe into fitting at the base of the tank (see photo No. 13). Make sure that the shorter length of pipe goes into the fitting.

You can also make a device for lowering and removing film from the washer. A stainless steel rod is used to form the configuration pictured in photo No. 14. Use pliers to make the bends. Photo No. 15 shows method of loading film washer.

Construction time is negligible, and cost is about \$8.

GENERAL DISCUSSION: The efficiency of this film washer is quite good. It is designed on the syphon principle, whereby there is a continuous flow of water passing through the reels and emptying the hypo-laden water out of the tank immediately. Chemically, hypo is heavier than water and tends to settle to the bottom of the wash tank. It is obvious with this washer that



ALL PHOTOS BY THE AUTHOR

2. Cut coffee can lid to fit into coupling unit.
3. & 4. Fit cutout into coupling unit.
5. Cut one-inch hole through coupling and four-inch pipe.
6. Completed hole.
7. Sand 90° fitting to fit snugly against the coupling, using the curve of the

whatever is at the bottom of the tank is evacuated first.

A test made using 5cc of purple dye showed that after six minutes of allowing the

four-inch pipe as a form.
8. Cement fitting in place on coupling over hole.
9. Position of drill for cutting hole into which is placed hose fitting.
10. Cement hose fitting into place on top of tank.
11. Assemble pipes for syphon.

water to overflow the top of the tank (having first blocked the outside plumbing for the syphon arrangement), the wash water was still a deep

12. Affix hose to fitting at top of tank.
13. Place syphon into fitting at bottom of tank.
14. Stainless steel rod configuration for immersing film reels into the film washing tank.
15. Use rod to immerse film into wash tank prior to washing.

purple so that the bottom of the tank was not visible. With the syphon operating, the water cleared in a little over two minutes. © Walt Seng, 1976 □



The old wheel leaning against an adobe wall brings back a wealth of memories. Kodak Ektachrome Professional Film was exposed for 1/60 at 1/11 in a Mamiya 220 twin-lens reflex camera with 80mm Mamiya lens and light green, K2 filter.

Most of us take an annual vacation. We go away for awhile to break the monotony of routine work and to renew our perspectives on life. Each vacation is planned and dreamed about long in advance. An itinerary is worked out, and we are determined on each particular jaunt that this time the snapshots and color slides will be tops—that they'll provide a vivid record of the trip, not just something for the wastebasket.

Then someone gently gives an ultimatum: "You're not a very good photographer, Clarence! Last year all of that expensive color film went down the drain. So hadn't you better brush up on your technique a bit?" Good idea! Once you swallow your injured pride, you just might decide that you really do need a refresher course.

CAMERA

A photographer is at the mercy of unpredictable weather and constantly changing lighting conditions while on vacation. To compensate for such variables, you must understand your equipment, know what it will and will not do and use it accordingly. Now,

what about your camera? Is it some ancient box you purchased years ago? Do you insist that it still takes top pictures today? Some of the old boxes will perform adequately if there is a good photographer at the shutter. But some do not take acceptable pictures according to today's standards, at least not sharp ones.

Today's cameras, like the new automobiles and color television sets, are consistently better than the products of yesterday because our technology is more sophisticated. The lenses are faster and sharper. They have greater resolution and fidelity. Many cameras today have built-in light meters that help with more difficult shots. There is better film available as well, both in black-and-white and a wide variety of color.

Let's say you own a twin-lens reflex camera that shoots 120 size film, 12 shots to the roll. The lens is f/3.5; it stops down to f/22 and has shutter speeds ranging from 1/500 down to time exposures. Nothing wrong with this camera, even though it might be several years old, and you have less than \$100 invested in it. Let's say it is a Japanese import. If you handle it like

a pro, you'll come home with some shots that might amaze even you.

Although the trend today is toward 35mm cameras, you won't be alone—some shooting a TLR. Millions have been sold in America, and many professionals swear by them. If the camera has a built-in light meter and is easy to focus, these features should take the fear out of the difficult shots.

Like 35mm models, 2¼x2¼ cameras are standardized—no matter where you roam, film is available. The camera is rugged and will take the bumps. Keep the lens and mirror clean, and it will give you thousands of exposures without adjustment or repair. Its shutter is synchronized for flash or strobe if you need artificial light for indoor shots. If you shoot color, this type of camera can give you super slides or prints. Many vacationers prefer to take a 35mm camera on vacation, though; they like it for its compactness and its adaptability to all types of lenses.

Your vacation shots provide a visual record of the places you visit each day and the people you meet. These photos can stir memories that grow more precious with the passage of time. Each time you look at them, you revive

Vacation Snapshooting

*Don't Come Home
with Mediocre Pictures*

By Grover Brinkman

Snapshooting

pleasant associations of happy, care-free days. But only if the shots are good! So make them as flawless as possible.

A good picture means, first of all, proper exposure. The correct amount of light striking the film for the correct period of time is the key to good pictures. If the film is exposed properly and your images are in sharp focus, you always get the picture you desire.

EXPOSURE

First, understand the basic workings of a lens. Consider the lens as a valve that allows a certain amount of light to strike your film. You control the light by changing f-stops. The high numbers, f/16, 22 and 32, indicate very small openings, which also means there's a small amount of light passing to your film.

Also, consider the shutter speed. Say that your shutter is set at 1/60 for a shot. The light for the next shot is much brighter, so you set the shutter at 1/125; this will admit half as much light.

What about film? Every type of film you shoot has a speed factor, an ASA rating, which is standard in America. There are very fast films, such as panchromatics of ASA 400, and slower, finer grained all-purpose films with an ASA of 125, 50 or even less. There are color films with ASA 25 on the low scale and ASA 160 on the high. If you are unfamiliar with the type of film best suited to your needs, the man behind the film counter will help you.

Generally, a good film for you is one that is fast enough so the camera can be handheld for an exposure. A good shutter speed for handheld shots is 1/125—fast enough to keep any quiver out of the shot. This shutter speed is possible with films of a "slow" rating if you're shooting in bright, outside light. However, for inside shots, such as for sports coverage, try a film of ASA 400. A color film that has an ASA rating of 64 is usually ample for most vacation shots and is more than ample for shooting in the mountains or desert, where light is usually brighter.

Professional photographers have many ways to guard against under- and overexposure. For instance, when shooting color, if there is any doubt about exposure, it is advisable to bracket. Shoot one photo at what you think is the normal shutter speed and f-stop, shoot one a stop below the normal, another a stop above. So of the



1 ALL PHOTOS BY THE AUTHOR



1. This rustic old mill has been grinding corn into meal for over a hundred years. Kodak Tri-X Film was exposed for 1/16 at 1/125 in a Mamiya 220 TLR camera with 80mm Mamiya lens and light green, K2 filter.

2. Colorado mountain lake, shot into the sun to accent shine on water. Ektachrome Professional film was exposed for 1/125 at 1/16 in a Mamiya 220 TLR camera with 80mm Mamiya lens and no filter.

three shots, you're pretty certain to capture the correct exposure in one.

Each roll of film comes with complete exposure instructions. Take two or three minutes to read every word. It may help to maintain a consistent shutter speed when shooting. If you're exposing at 1/125, try to shoot all of your shots at that speed, adjusting the diaphragm opening for more or less light as needed. Very few people can hold a camera at slower shutter speeds and get sharp pictures, yet when you question someone as to the

speed at which the picture was taken, it is not uncommon to find it was 1/30 or even 1/15 of a second. So they end up with a blurred image. Remember, you need higher shutter speeds if the subject is in motion.

Don't forget that with your lens opened up to f/3.5, the depth of field will be very shallow, unless you are shooting distant objects at infinity. As you close the shutter opening, the field deepens. To illustrate, let's say that you're shooting something within 10 feet of your camera as the principal subject, but you also want the background to be sharp, although it is much more distant than the subject. You must stop down to get this added depth. Although there is a widespread preference for color today, don't give up using black-and-white film. Many pictures are more dramatic in black-and-white than in color. Some photographers carry two cameras, one loaded with color film, one with black-and-white. There are also cameras on the market that have different magazines that can be slipped off or on depending on which kind of film you need. The average vacation snapshooter doesn't have the kind of money to invest in such a camera, so he or she buys a more conventional piece of equipment with far fewer special features.

COMPOSITION

For a good black-and-white shot, you need strong shadows or an intriguing composition to draw the eye into the picture. Many neophytes make the mistake of shooting distant scenes,

such as mountains, landscapes or seascapes, with nothing in the foreground. The resulting shots are flat and dull. Put a figure in the foreground, or frame the scene under the overhanging limbs of a tree, or through a doorway or add a rail fence, and you give dimension to the picture.

Another method to increase the dramatic quality of your shots is by means of lens filters. With black-and-white film a light green filter will darken the sky and enhance clouds in an outdoor scene. A red filter will increase the contrast of black-and-white shots even more. When you put a filter over your lens, say with a filter factor of two, that means you open the shutter an additional stop to compensate for the light loss. Some deep red filters have factors as high as 10, which slows down the film a great deal.

Whether using color or black-and-white film, many vacation snapshooters are impressed by the size of some distant image, say a mountain, a waterfall or a giant statue. They hurriedly take shots, but when they exhibit the pictures, something seems to be lacking. Professional photographers call this lack of scale. Include in the shot something of conventional size—a person, animal, your camper or even an old tree for contrast and comparison.

Often the most unusual or dramatic photos of scenics are taken in the morning or late in the afternoon, when a lower sun enhances the shadows. To test this, take a photo of say, the Grand Canyon or any scene at noon. Then return at 9 o'clock in the morning or at those magic moments near dusk and reshoot the same scene. You'll see the difference immediately. Light is quite fickle, very wonderful, very playful. A good photographer uses his own wits against the playful antics of natural light, and if he's good at what he is doing, he generally outwits it.

All of the photos used to illustrate this feature were taken with a very modestly priced camera. They were taken to show you that your investment in your vacation camera need not be extravagant to come home with pictures or slides that you are proud to show. There is nothing so complicated about vacation snapshooting that a little time, thought and patience won't simplify. The explanations given here are basic. No effort has been made to explore the many facets of more advanced photography; I've merely laid the ground rules to enable a novice to properly expose his or her film. Happy shutterbugging! □

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THE DARKROOM ZOOM

**Fantastic Effects
Without An Accessory Lens**

By Curtis Badger 2

I have a confession to make. I don't own a zoom lens. It's not that I have anything against zooms; some excellent ones are being made by lens manufacturers today. I've tried them, and I've gotten good results with them. It's just that I prefer to stick with my lighter, faster and more compact fixed focal-length equipment.

One thing that has always fascinated me about zooms, though, is the optical effect they produce when the focal length is changed during exposure. Not long ago I seriously considered purchasing a zoom for that singular

purpose, but reluctant to shell out a couple hundred bucks to accomplish that one effect, I began to do a little darkroom experimentation to see if I could find a technique that would give me similar results.

After a few false starts, I discovered that a zoom effect could be produced easily in the darkroom with the equipment and materials already on hand. What's more, creating the effect in the darkroom instead of in the camera allows for quite a few built-in advantages. For one thing, the darkroom zoom is much more controllable. I can

vary the effect to give as much or as little zooming as I want, and I can concentrate it in any area of the photograph, instead of just in the center of the picture area as produced with a zoom lens.

Another important consideration is that the effect is created directly on the print rather than in the negative or slide, so I can still make all the unmanipulated prints I want from my original, unadulterated negative. Also, I've found that my files contain many images which readily lend themselves to this technique.



ALL PHOTOS BY THE AUTHOR.

It's a relatively simple procedure, one that can be accomplished by anyone with a basic knowledge of printing technique. The only equipment needed are the standard enlarging setup and

1. & 2. Unmanipulated print has harsh, distracting background. Zooming softens contrast, greatly reduces detail and places emphasis on the subject.

3. Backlighting subjects can be greatly enhanced by using the darkroom zoom technique.

4. Unlike in-camera zooming, the darkroom zoom is easier to control. Portions of a picture, such as this model's face, can be printed normally while the surrounding area is blurred.

5. Zooming adds impact to this shot of a race car. By subduing detail in the already somewhat blurred background, emphasis is placed on the speeding car.

some simple dodging and burning-in tools.

HOW TO DO IT

Basically, the technique consists of printing one area of the picture normally, while shielding light from the other areas. Then the normally exposed area is held back, and the remainder of the negative is exposed, but during the exposure, the negative is slowly racked out of focus. Sounds simple enough; now here's how it's done.

As I've mentioned, dodging and burning-in tools are required. I use a piece of black cardboard taken from

an empty box of photo paper. The cardboard measures about 6x9 inches, and a 1x1½-inch oval is cut in the center. The piece of cardboard removed when the oval was cut is then taped to a thin, rigid piece of wire to make a dodging tool. The tools, of course, can be made in different sizes and shapes to fit different needs.

The first step is to select a negative that will lend itself well to this technique. Negatives with plenty of background detail and moderately high contrast seem to work best. The more detail the better, as the technique merges

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THE DARKROOM

ZOOM

highlight and shadow areas, thus creating a streaking effect.

Next, the correct exposure for the negative being printed is determined. This can be done by any of the standard methods. I prefer to use the test-strip method, using 1x8-inch strips cut from 8x10-inch enlarging paper.

With the exposure determined and the image composed on the easel, the area of the negative which will be printed normally (unzoomed) is selected, and the enlarger light is turned off. The normal area usually contains the photograph's dominant subject matter.

Using the piece of cardboard with the oval opening to hold back the remainder of the picture area, a piece of photographic paper is placed in the easel, and the normal portion of the print is exposed. The cardboard should be moved up and down slightly to feather the border of the image and make it blend more smoothly with the rest of the print.

Now the enlarger's red filter is placed over the lens, and the enlarger light is turned on. The wire and cardboard dodger is held so that it will hold back the already-exposed normal image; the red filter is removed, and the remainder of the image is exposed. During the exposure, the focusing knob of the enlarger is slowly turned, and the image is thrown progressively out of focus. As in the first step, the dodging tool is moved up and down slightly to soften the edges and help it blend with the normal image. Also, the handle of the tool should be moved laterally so it won't show up as a light line in the print.

I've found that it helps to increase the exposure time for the zoomed portion 15 to 20 percent over the expo-

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sure for the normal portion. This will darken the outer area and add emphasis to the unzoomed section.

That's all there is to it. The print is now processed normally in paper developer, stop bath and fix and is washed and dried. Let me caution you, however, that all is not quite as simple as it sounds. The technique takes a lot of trial-and-error practicing and better than average coordination before perfection is achieved, so don't give up if your first few tries are dismal failures. I guarantee that after a short while, your results will be highly rewarding.

HELPFUL HINTS AND ACCESSORIES

A foot switch on the enlarger helps, but it is not a necessity. Also, it might be helpful to draw an outline of the unzoomed area on a piece of white paper to use as a guide when positioning the wire cardboard dodger before the zoomed section is printed. However, if the edges of the two images are sufficiently softened, this will not usually be necessary.

Long exposure times should be used. They make the technique easier to perform and more visually effective. Also, the focusing knob of the enlarger should be turned so the negative stage moves up instead of down. If it moves downward, the image will become smaller on the easel, and unless the negative is cropped greatly, the image will be cut off along the print edges.

If your enlarger has no red filter, the technique will still work. An enlarger timer is used, and as soon as it is activated, the focusing knob is turned. I hold the dodging tool in my right hand and activate the timer with the left, then quickly begin turning the focusing knob. Again, long exposure times make life easier.

With a little practice, the darkroom zoom is an easy technique to master. It can be used in either black-and-white or color printing, and the results are limited only by the imagination of the practitioner. It can add impact to an otherwise dull shot, and it can be used to eliminate busy, distracting backgrounds. The sizes of the areas printed normally or zoomed and the amount the negative is thrown out of focus can be varied to produce a wide gamut of photo effects.

The technique won't make you an overnight artist, but it's a lot of fun and a very valuable addition to your photographic bag-of-"trick" techniques even if you do own a zoom lens or two. □

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EDITOR

USUALLY

INSIDE



Showing your portfolio of photographs to an editor, an art director or a gallery owner can be a frustrating and disconcerting experience, not for the obvious reason of the potential damage to a vulnerable ego, but because years of experience often afford little insight into the effectiveness of your presentation. Of course, acceptance of your work encourages you to go on, but that may be in spite of a poor presentation.

Recently, the Southern California Chapter of The Society of Photographers in Communications (A.S.M.P.) held a symposium on portfolio presentation and sponsored a showing of the portfolios of a number of professional photographers in a multiscreen slide show. As president of this organization, I've had a great deal of opportunity for learning.

Photography is a communications art. A portfolio of photographs should communicate a message that will encourage a relationship between the producer of the portfolio and his audience. If that relationship is not established, a failure to communicate has occurred. That talent should prevail regardless is an ideal that reality most frequently does not support. To insure that the success your talent deserves does not suffer defeat because of a communications failure, you need to take deliberate steps to assure that your message is read and understood.

PLANNING

The first of these steps is planning. In drawing any plan a definition of purpose is required. Obviously, a portfolio is put together to attract favorable attention and gain acceptance for its creator. Why your portfolio should receive acceptance is a question you need to put to yourself. In other words, identify and analyze the audience for which your portfolio is intended. What does that audience want?

If your audience is a magazine editor, then a careful and thorough study of his publication is in order. Ask yourself some of these questions. What is the editorial policy of the magazine? What kind of readership does it have? What kind of material is supplied by outside contributors? You should be able to answer these questions yourself by reading a selection of back issues of the magazine.

1. An opening shot should identify the theme and invite further interest in a portfolio. The camera here was a Topcon Super DM, 20mm f/4 Topcon lens; exposure was 1/30 at f/6.3 on Agfachrome Film.

2. An apparently simple composition can contain an intriguing interplay of detail. Exposure was 1/30 at f/5.6 on Ilford Pan F Film.

portfolio: planning preparation presentation



2

reflections
from brewery gulch
by david brooks

portfolio

If your portfolio is intended to be shown to the owner of an art gallery, then study the gallery over a period of time to determine its style and subject orientation. It will also prove valuable to know what photographs have been sold and what shows have been considered successful. These questions can be answered in part by direct inquiry and in part by reading published reviews of the shows.

If you hope to capture the interest of an art director at an advertising agency with your portfolio, then it's mandatory that you know what clients the agency

services. Specific and detailed knowledge of the print campaigns conducted by the agency to promote their clients' products is also essential. You would start to research these questions by visiting a library to study the National Register Publishing Company's listings of advertising agencies and their clients, known as the *Red Book*. Once you know an agency's clients, you will want to look for examples of ads produced by the agency for those clients.

At this point you may find yourself questioning whether this is any way to be true to yourself as a photographer. In no way need your integrity as a photographer or individual be put in jeopardy by playing to an audience. The message you communicate should

be uniquely yours. Just be sure that it is expressed in language that is both familiar and welcome.

A photographer cannot expect any individual viewing a portfolio to maintain an interest in every photographic side trip. A good portfolio is not a conglomeration of pictures of every diverse subject you have ever photographed. Your competence will be just as well conveyed by a series of related pictures exploring a particular theme.

One of the qualities an editor or art director may look for in a portfolio is a reflection of the photographer's identity. What you put of yourself in your pictures will be more clearly apparent through the way you put together a group of pictures on a singular theme. An unrelated collection of spectacular images can also be very suspect in the mind of the viewer. Are these just lucky shots, or are these pictures representative of a consistent talent? This is a question you would not want unanswered.

In planning a portfolio you would do well to take a lesson from Ben Helprin and create an assignment for yourself (see "Self-Assignment"). Specifically, what that assignment might be depends on your point of view, your interests, your particular skills with technique and subject and the time and resources you have available to invest.

Be freewheeling when choosing a subject. Don't be limited by convention or the assumption that your audience's interests and ability to appreciate a subject are confined to the practical and specific applicability of a subject. Remember, the prime purpose of what you show is to demonstrate your creative ability and photographic competence and to reveal what you can give of yourself to a subject. But don't throw common sense to the wind. It would be too much to expect the editor of an industrial journal to acquire much confidence in your abilities if you show him a series of glamour pictures of pretty girls!

PREPARATION

Executing your plan for a portfolio should involve researching the subject you have chosen to photograph to determine what you want to say pictorially and to establish the most appropriate techniques to do the job. This may involve reading as much as is available about the subject, or it may entail a preliminary trip of reconnaissance.

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trait of a town with the interests of a magazine editor in mind. My attraction to Bisbee, Arizona, was aroused during a visit of no more than two hours last year. Familiarity may not breed contempt, but it often obscures the perception of graphic significance. So a second visit to photograph the town, I hoped, would still involve an essentially new experience. There's a definite advantage if you can photograph your subject with a feeling of adventure and the excitement of exploration.

Even a very small town such as Bisbee could be too large and complex in scope for a portfolio theme. An arbitrary limitation was in order. This gave me the opportunity to perform a kind of editing by approaching the subject selectively and seeing it interpretively to lend to the finished portrait the quality of being seen through the eyes of an individual. What form that selectivity and interpretation would take would have to wait for my reaction to the town itself. My hope was that my impressions on arrival would provide the key to my photographic approach.

In spite of most detailed planning of even the most commonplace aspects of a project, the unexpected will undoubtedly occur. Bisbee was a lucky choice for me, as I found only the most pleasant kinds of surprises. First of all, Steve Hutchison, owner of the Copper Queen Hotel where I stayed, is a font of limitless enthusiasm about the future of Bisbee. It was his excitement and vital interest that provided my first key to how to approach portraying the town. His descriptions of what Bisbee is today and his visions of its future opened my eyes to look for graphic symbols in the town to reflect the presence and character of its people.

This idea of reflection also gave me a clue to my technical approach to picturing Bisbee. Close-ups of windows, of stores and offices were to be the target. Almost immediately, as I searched for angles through the viewfinder, I found I could include reflections in the windows of the buildings along the street, giving more depth of interest in the composition, more truly mirroring the character of the town.

The center of visitor attraction in Bisbee is a historic street called Brewery Gulch. The reflections in the windows of the street, the details of the windows and their contents and the rest of the street in reflection seemed to include both a vision of the present and a glimpse of the past. In this one street I was lucky enough to find a name for the portfolio, an opening pic-



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portfolio

ture to establish the theme, a photographic point of view and the technique with which to continue my portrayal of the town.

Beyond the fact that the opening picture of a portfolio, the keynote, establishes the theme and attracts the interest of the viewer, it lends a conceptual framework for the rest of the series. The reflections in the windows of the streets sustained my interest in discovering every perspective depicting the physical attributes of the town as well as the essence of its life and the individual influences of the people.

A self-imposed limitation on point of view and restriction of technical variations encourage you to see the value in simple picture statements. These limitations compel you to be sensitive to the subtleties and nuances in each scene, to refine the image in the viewfinder, to go beyond the initial simple statement to include delicate and complex relationships of tones, shapes and textures to give the picture a sustaining quality. In other words, simple graphic statements capture the attention and set the tone, while the interest of the viewer is nourished by subtly defined relationships that complete the subject.

Never be satisfied by what *seems* like a good shot in the viewfinder; take a second or third turn around your subject. Expose every angle, back off, move in close, come back when the light has changed, return when your mood is different. If your best results are found on the last few frames of the last roll of film, you can be sure another roll or two would have been a good investment.

PRESENTATION

Choosing the pictures to include in your portfolio can be an agonizing process. If only they could be chosen by a clairvoyant representative of future audiences! You must try to exercise a balance between objectivity and personal pride, hoping that your feelings will augment reasoned selectivity.

One final note about the selection process. You may wonder if I expect you to exclude everything but a series of pictures on a single theme. If your presentation does what it should and communicates your competence and your ability to pursue a point of view, and if your audience recognizes that you have something unique to say, then there may be an interest in what other subjects and techniques you

have undertaken. It will be to your credit to have samples of your work with other subjects, employing a variety of techniques. Your other photos might include spectacular individual shots that you feel are the high points of your photographic skill.

There's no rule that says your portfolio can't contain two, or possibly three, themes. Just be economical and considerate of your audience's time and enthusiasm. Be particularly careful not to include weak statements and mediocre work that could detract from the overall impression.

Further study of your intended audience is in order once your portfolio selection is made to choose the most effective form of presentation. There are many questions to be considered. Should you present mounted prints, prints in a portfolio case, original transparencies for viewing or projected slides? Should color or black-and-white predominate? To take advantage of every option would be both wastefully expensive and inefficient. To assume that there is an ideal form of presentation is to ignore the fact that personal preferences on the part of your audience will occasionally defy reason. Your decisions should produce a portfolio that is both flexible and easy to show, with an application of restraint as to the size of the prints and quantity of the images included. The scale and quantity of images you show should be relative to their potential usage. For example, the number of pictures and their size in a contemporary magazine layout are modest.

In summary, it should be evident that there is no set formula to follow. Your best guideline for arranging the physical attributes of your portfolio is to follow the principle that form follows function. Be considerate of your audience. Obviously, a portfolio of prints of varying size and configuration will be cumbersome to handle and view. Glossy prints will soon show the effects of handling, and the image quality will suffer. A projected slide display that is slowly paced will likely frustrate the viewer. Disorganization and disarray will only detract from the good impression you have worked so hard to create. □

All black-and-white photos taken with Canon F-1 and 24mm f/2.8 Canon lens.

1. Wide-angle distortion can give a deeper, more dynamic view of the subject. Exposure was 1/60 at f/6.3 on Pan F film.

2. Fine details and large, strong shapes can balance a complex statement without creating confusion. Exposure was 1/30 at f/11 on Ilford FP4 Film.

3. A change of angle may lead to interesting discoveries and unusual design relationships. Exposure was 1/30 at f/4 on FP4 film.





2

ALL PHOTOS BY THE AUTHOR



3

BICENTENNIAL

NEWS



The Spirit of Fact: The Daguerrotypes of Albert Sands Southworth and Josiah Johnson Hawes, 1843-61 is a unique Bicentennial photo exhibition being shown at the International Museum of Photography at the George Eastman House. Southworth and Hawes were the two most prestigious portrait photographers in mid-19th century America, and this exhibition of 110 Daguerrotypes is an attempt to reestablish in public view the significance and expressive achievements of these two men in American art and photography. The show includes portraits of such notable American personalities as Ralph Waldo Emerson, Henry Wadsworth Longfellow,



low, Daniel Webster, Lola Montez and Harriet Beecher Stowe.

Both exhibition and catalog have been made possible through a grant from the National Endowment for the Arts. The show can be seen at the museum until June 8, 1976 and then will travel to Washington, D.C., and Boston, Massachusetts. For further information contact Christine Hawrylak, George Eastman House, 900 East Avenue, Rochester, New York 14607.

* * * *

Images of an Era: The American Poster 1945-1975 is an exhibition which presents a variety of striking visual images representing an overall picture of the aesthetic, political, social and moral climate in America for the past 30 years. The posters show photography, photomontage and graphic arts techniques as powerful communication tools



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The exhibition was organized by the Smithsonian Institution and funded by the Mobil Oil Corporation; it opened in Washington, D.C. and then travels to Houston, Texas; Chicago, Illinois, and New York City. The show will then go on European tour from 1976-1978. For further information, show schedules and catalogs write to Karen Hughes, c/o Ruder & Finn Fine Arts, 110 East 59th Street, New York, New York 10022.

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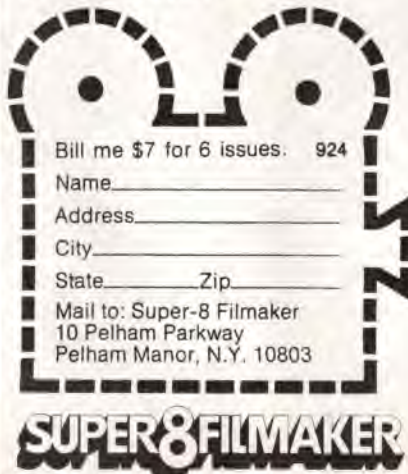
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READERS' RESPONSE



□To my readers—many thanks! The response to my September, 1975 column has been enormous and very heartwarming. So many letters arrived (they still do) that I feel compelled to comment

accordingly. I also wish to explain that an eight-week out-of-state assignment precluded my replying sooner. Certain queries were so thought-provoking and detailed that they have become the basis of columns which will be appearing in the near future. Thus, everyone will be able to benefit from the exchange of particular questions and replies.

As anticipated, most of the queries concerned how to get started, how and where to sell photographs, how much to charge, photo-agency representation and photo contest rip-offs. A number of letters asked about copyrighting photos and slides, how to submit material to magazines, how to protect photographs offered for sale, the photographer-subject and photographer-client relationships and photographers' rights. All are very serious, well-thought-out questions from people deeply concerned with photography—readers who are not only genuinely involved but who have sent out a cry for help. Some of the letters went on for several pages, containing both photographic and personal questions, many of which were so complex that I am doing additional research rather than speeding off a mediocre reply. I might also add that in all cases the readers were most complimentary about PhotoGraphic Magazine, and rightfully so.

One letter arrived from Germany, requesting a copy of PhotoGraphic's, *Writer's and Photographer's Guide*. The sender had the foresight to include a self-addressed, stamped envelope with 50¢ U.S. postage, thereby allowing for the cost of mailing from our country to foreign shores. A reader from Canada asked several questions and enclosed a Canadian dollar bill. Another letter contained a foreign coin and a self-addressed envelope—but no stamp. One reader asked seven questions and apologetically enclosed a dollar bill. As a matter of fact, a number of readers who felt they went over reasonable limits of questions sent checks for one dollar, 75¢, and quite a few sent two quarters.

A dozen or so simply sent self-addressed envelopes—completely overlooking postage and handling charges for copies of columns. On an amusing note, one letter arrived from a newly afflicted photo buff whom I had met during an ocean cruise seven years ago.

A particular letter arrived from a very old friend of mine, Ed Hannigan, Dean of the School of Modern Photog-



These are some of the letters I received in response to my offer to try to answer readers' questions. I hope my replies provided readers with the answers they were after. If not—don't hesitate to write again. © David Sutton

raphy. Ed was editor of *U.S. Camera* for a number of years and was always receptive to meaningful submissions—even mine! His letter and enclosures contained a fountain of knowledge which I shall cover in a forthcoming column.

One young reader asked how to go about becoming an apprentice to an established professional. I thought back to the years when I served as an apprentice. Labor laws were quite different in those days. The minimum hourly wage was about 50¢. Today it is higher, although not necessarily in keeping with the state of the economy. Furthermore, the U.S. Department of Labor has some very stringent laws concerning minimum requirements and restrictions involving the engagement or use of minors as apprentices, particularly if they are under the age of 16. Other employment laws enter the situation. Thus, engaging an apprentice may not only be time-consuming for a photographer, despite his or her altruism but perhaps costly as well. State, city and county ordinances also have some bearing on such training. Therefore, what might be quite suitable in one part of the country might not apply elsewhere. Since I recognize the value of apprenticeships and/or on-the-job-training, I will investigate the ramifications involved and report back at a later date.

One particularly excellent question

was put to me as follows, "Suppose I have two identical negatives. If I sell one to a greeting card company or something of that nature, is it legal for me to sell the other negative to another company?" If the other company is also in the greeting card business and/or in any way competitive, the answer is an emphatic *no!* In other words, it is *highly* unethical and improper to provide identical material to rival magazines, clients, etc., at the same time. Such a transaction is commonly referred to as a *double plant*, and the ethics surrounding sales and submissions were covered in my columns of June and July 1973. The November and December, 1972 columns covered protection of your rights and spelled out the terms of sale prior to or at the time of sale.

These are just a sampling of some of the questions that were sent to me. They illustrate the frustrations one encounters when first starting out—frustrations that are further compounded when you look for answers to questions but can't seem to find them.

While I admire my readers for their dedication and concern in seeking out information that eludes them, I observed that many readers have a tendency to read too quickly, skimming along the surface, looking only for particular passages which appeal to them, instead of reading a column or article in its entirety. If you give things merely a cursory glance, you might miss some very salient points. Even worse, you might miss out on information that can only be obtained by reading between the lines. In short, I suggest that you read more thoroughly.

For the benefit of those of you who did not read or know of my offer in the September, 1975 "Where the Action Is," I'll repeat the offer I made, with a few amplifications. If you have any questions about professional photography, simply send me your query, including a self-addressed, stamped envelope plus at least 25¢ to help defray the cost of copying. In return, I'll send you a copy of one or more previously published columns to most appropriately answer your questions. Please be as specific and to the point as possible—concise questions will make it easier for me to select particular columns that answer your queries and will also speed up the replies. If you ask more than a few questions, please enclose additional postage to enable me to send you the appropriate replies. It would also help if you send a standard letter-size envelope for the return reply.

Finally, keep the letters coming. I'm delighted to hear from all of you. Even more important, I'm gratified because of your enthusiasm and dedication to the fascinating hobby and profession of photography. □

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(Continued from page 20)

CONTEST NEWS

The Motion Picture Division of the Photographic Society of America invites all amateur moviemakers to participate in the world's oldest motion picture competition—the 47th Annual PSA-MPD American International Film Festival. In addition, there are contests for commercial and student films with separate awards for each class.

Films can be on any subject, black-and-white, color or both, with or without sound, originals or duplicates. They can be in 8mm, super 8 or 16mm. This year's festival will include a special Bicentennial film category.

Closing date for all entries is May 15, 1976; write to Cecil N. Paget, P.O. Box 1009, Alameda, California 94501 for entry materials and further details.

* * * *

Closing date for all entries in the 29th El Camino Real International Color Slide Exhibition is March 16, 1976; 20 PSA metals will be awarded, including one gold metal for "Best of Show." Slides must be clearly marked with title, name and address, and there's an entry fee of \$1.75. For entry materials write to Floyd D. Garton, 1019 Luray Street, Long Beach, California 90807.

* * * *

The 1976 Cincinnati Salon of Photography is now open to all photographers. 15 PSA metals will be awarded in three categories—pictorial (including a special "contemporary" section), nature and photojournalism. There's a \$2 entry fee for a maximum of four slides; closing date for pictorial and nature slides is March 24, 1976; April 1, 1976 for photojournalism. Write to the Cincinnati Color Slide Club, 847 Cascade Road, Cincinnati, Ohio 45240 for entry materials.

* * * *

The 2nd Annual National Photographic Exhibition, entitled **Focus 76** is now open to all photographers. The event is sponsored by the Top of Texas Branch National League of American Pen Women, Inc., and cash prizes will be awarded, including \$500 for black-and-white "Best of Show" and \$500 for color "Best of Show." Four entries in each classification—portraits, architecture, (commercial and industrial), still life, landscape or seascape and candid human interest—will be accepted. For entry forms and further information write: Top of Texas Branch NLA PW, c/o Julia Spurlock, Tascosa Road, Box 331, Amarillo, Texas 79106.

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110 PHOTOGRAPHY

KALTON C. LAHUE

WHEN IS A POCKET CAMERA NO LONGER POCKETABLE?



□ If you've seen, held or used one of the Keystone Everflash pocket cameras recently, you know what my gripe of the month is. When Kodak introduced the pocket camera concept to the world in 1972, the really exciting aspect of the small format to the public rested in the word "pocket." Now, you could have the small camera (as Dr. Land would somewhat optimistically and incorrectly predict in the case of his Polaroid SX-70) that could always be by your fingertips and deliver decent pictures with absolutely no fuss.

But Land ho! Have you seen the new models? Have you compared them with the ever-shrinking compact full-frame 35s? If so, you've undoubtedly noticed that many of these 35s are *smaller* than the newest pockets! Apparently some of you have, because my reports from all across the country tell me that the "fat-ties" just aren't selling. Why do manufacturers equate size with value constantly and then moan when their "tanks" don't sell?

I suppose the Keystone Everflash pocket camera is probably the most notable example, simply because it was the first and still the largest—Vivitar recently followed suit with its Model 602, but overall bulk is somewhat less, de-

spite the fact that both cameras feature built-in electronic flash. Okay, so Keystone had a pretty good thing going with its Everflash 126 camera line. While these were somewhat larger and heavier than the average 126 camera, most people could overlook that for a couple of reasons—competitive cameras were not *really* that small, and frequent flash users liked the idea of the built-in electronic flash.

So I suppose it must have seemed logical to the powers that be at Keystone that a pocket camera with the same marketable features would go like hotcakes at the annual fireman's picnic. Trouble is, it's not always easy to sell hotcakes when what the customer really wants is a hot dog. Since Keystone does not part with its sale figures these days, I can't really *prove* that the cameras didn't sell. I just see a lot of dust on the ones on local dealer and discounter shelves, and the fact that Keystone related its recent poor profit picture primarily to the camera manufacturing and calculator division must indicate something besides the fact that its instant-picture camera proved a near-total disaster.

As you may have also noted, pocket cameras with detachable EF units have recently appeared from companies such as Asanuma, GAF, Hanimex and Kodak. In the case of the latter, it's unfortunate that the EF unit is larger than the camera and almost as costly. In theory, the clip-on or plug-in detachable EF gives you the best of both worlds—small camera, semibuilt-in flash. While I have my doubts about a camera that uses *only* EF, we can consider them as pioneers, in a sense.

Yet the thing that really fakes me out is the shortage of *tiny* quality pocket cameras. Only the Rollei A110 has any real virtue of smallness. Except for the



Relative bulk of 110 cameras equipped with provision for flash photography is demonstrated by Keystone Pocket Everflash (the largest at 19.8 cu. in.), Hanimex 100 and Konica Pocket 400 (the smallest at 9.6 cu. in.). The Konica 400 is available in the U.S. under the Copal name.

Hanimex Mini, few are any smaller than the Kodak Pocket 10 or the Agfamatic 2000—the latter an absolute jewel of small precision design, but one not imported to the United States. Even Minox disappointed us with its run-of-the-Rhine design, set in dull plastic and a king-size body format; of course, they're made by Balda, and that might help account for it as well as hesitancy on the part of Minox to market it here. It appears that the only manufacturer to understand the market is Haking in Hong Kong, which produces under its Halina label for distribution in parts of the world other than the U.S.; here the cameras are sold under private labels such as J.C. Penney, Sears, GAF, et al. Their new collapsible 110 camera line uses the push/pull film advance method in a manner similar to that of the Agfamatic 2000 and Hanimex Mini.

There may be a logical reason or two for the size increase in 110 cameras from an engineering viewpoint—you can't stuff everything Canon put into its 110 ED into a much smaller case. For example, Kodak designers have told me that the reason for the size of their original 110 cameras was related to the fact that the user needs a certain amount of camera to grip properly. Otherwise, the pictures show camera shake, that bane of all 110 negatives/slides. While this is partially overcome by the use of softer shutter releases, most people still don't use a pocket camera as they should, and a certain amount of size and heft (note the weight of the Kodak Pocket 50, 60 and Trimlite 48) is desirable if you want really good results. It's also true that people expect the same things from a pocket camera that they get from their 35mm—primarily, good sharp pictures under a variety of conditions. Considering their size and the relatively primitive state of the art, 110s produce these to a remarkable degree.

But back to growth and potential smallness. Remember those somewhat ill-fated 126 "throwaway" cameras that used a 126 cartridge snapped to a small box containing a lens, shutter and viewfinder? They were hardly larger than the 126 cartridge itself, and they worked, despite the fact that their popularity left a good deal to be desired. Where is the 110 manufacturer who can match, not the idea (which probably wouldn't sell any better than its 126 counterpart did) but the potential size? What we need is something smaller than a matchbox, not larger than a breadbox. If those who design 110 cameras continue overloading the package, the smart consumers are going to discover the world of constantly shrinking 35mm cameras, and then I'll have to change the title of this column. □

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TOKYO NOTEBOOK

M. A. HADLEY

NEWS FROM THE FAR EAST



□ Japan's camera makers go all out during the "bonus season" at the end of November and beginning of December each year. The manufacturers try to snare their share of the largess bestowed on labor to help them clear their debts before the end of the year.

With bonuses averaging around \$1000 for most white collar workers, all of this loose change is incentive for heavy promotion campaigns.

Reaping a generous share, if not a windfall this year, is Olympus Optical Co., Ltd. (43-2-chome, Hatagaya, Shibuya-ku, Tokyo, 151), which announced the long-rumored and awaited OM-2, companion model to the much-respected OM-1. Designed by Yoshihisa Maitani, designer of the Pen and Pen FT, the new electronic shutter AE motor-drive camera was kept under the table for five years, according to my long-time friend Ted Shimoyama, Olympus' export manager.

The OM-2 went on sale here November 20, 1975, and Ted confided that Ponder & Best will debut the model at the PMA convention and camera show in Chicago this month with general distribution okayed beginning in April. Half of the OM-1 production is being shifted from Olympus' Suwa, Nagano Prefecture plant to the Ina facility, about 40 kilometers from Suwa (25 miles for those not thinking in metric); the Suwa assembly lines have been turning out only 5000 units per month since October.

Ted and Hajime Uchikoshi, Advertising Section, International Department, spent two hours with me explaining the OM-2's outstanding features. Best of these are silicon blue cells that read exposure information at the film plane at the time of exposure—a real-time system that can even change exposure determination in mid-exposure. This feature really comes to the rescue when another photographer's flash tries to do you in. The silicon blue cells are located just behind the lens mount and point toward the focal-plane shutter, which is printed with an off-white pattern for preexposure reading to offset shutter delay time. Handling the elec-

tronics is a medium-scale integration (MSI) that even switches the metering system from center-weighted under normal lighting conditions to an averaging mode under low-level conditions.

Camera store salesmen are going to have a field day demonstrating auto-



Elko Nakagome demonstrates the new Olympus OM-2, placed on sale in Japan late last year. © M.A. Hadley

matic exposure during motor-drive operation—from five full frames per second down to one exposure about every 60 seconds at full f/1.2. Measuring range with ASA 100 at f/1.2 is about EV -5.5 to EV 17 at normal temperature and humidity.

Announced at the same time, in addition to the Quick Auto 310, were: Motor Drive 2, M.15V nickel-cadmium Control Pack 1, M.15V nickel-cadmium Charger 1, Accessory Shoe 2, Remote Sensor, OM Mount Astroscope Adapter, Focusing Screen 1-8 (all matte type), Focusing screen 1-13 (microprism/split-image-matte type) and Olympus OM-2 black body. The only OM-1 incompatible item is the accessory shoe.

Continued OM-1 production puts the OM-1/OM-2 production figure in excess of 30,000 units per month.

AROUND TOWN

March is the month of camera and trade shows both in Japan and the U.S., with the Japan Camera Industry Association holding 10 to 12 shows each year here in various major cities. Last year the photo shows featured mostly Japanese equipment, with the exception of a special show at Diamaru department store featuring foreign manufac-

turers and spot sales of vintage and collector-type cameras.

December marked a first, however, with the holding of the '75 Japan Photo Festival on December 5, 6 and 7 in the Science and Technology Hall of the Science Museum at Hitotsubashi, a stone's throw from my office in the Palaceside Building. The site is also that of the Professional Photo Fair, which takes place earlier in the year. The festival was sponsored by Japan Camera Industry Association, with 25 members participating; Japan Sensitized Materials Association, four participating members, and Japan Photographic Equipment Manufacturers' Association, with 18 exhibitors taking part. The timing for this show was excellent, coinciding with the "bonus" payment period. One could call it a bonus camera show.

Speaking of shows, the Japan photo press was accorded its second pre-Photokina press conference hosted by The Federal German Association of Photographic Industries and the Cologne Trade Fair and Exhibition Co., Ltd., represented by Dr. H. G. Kindermann, president of the association, and Director D. Ebert at the Tokyo Hilton Hotel.

The Japanese rumor mill is highly productive—the latest adrenalin producer is that Asahi Optical may soon enter the 110 competition.

"Yes," an Asahi employee admitted, "we are working on a 110 design, as are most other research labs, but we have no plans to show a 110 at the PMA show." He had no idea of Photokina plans. "We will be showing two new lenses at PMA, a wide-angle and a telephoto, both lighter in weight and with wider apertures than those we currently manufacture in these focal lengths.

Nikon is offering an auto-focus 35mm enlarger with a tilting negative stage and color filter drawer. A condenser model, the RA-350 features a remote focusing adapter and accepts 3x3-inch filters. Limited to the domestic market at present, it has a retail price of 160,000 yen (about \$526.31) and comes complete with 50mm f/2.8 Nikkor EL enlarging lens.

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ONE TO ONE

DAVID B. BROOKS

ASA: STANDARD OR STUMBLING BLOCK?

I've been trying for about a year to determine optimum developing times with my equipment and location. But the less than superb results suggest I might be missing some important step or aspect. I guess I don't know how to cope with or compensate for the many variables; they really bug me. For example, my three cameras with built-in meters and my two handheld meters all read the same gray card in the same light differently.—Harvey Hansen, Clearwater Lake, Wisconsin.



□ I would really be surprised, Harvey, if you *did* get the same readings with different cameras and handheld meters. You are bugged because meters in the camera or in the hand interpret what they "see." Their visions are as biased as ours as individuals are.

One reason is that each photographic manufacturer must create a design for a meter or camera that differs sufficiently from the competition so as not to infringe on their patent rights. Each design includes a plethora of compromises, including the fact that there is no differentiation made by meter or camera as to whether it is reading for an exposure made with black-and-white or color film.

Add to that the fact that film manufacturers assign each film an ASA rating according to varying interpretations of the standards, and none of the ratings is claimed to be more than a recommended point of departure. The only way out of this jungle of variables is clear: establish your own standards, individually determined exposure indices, and substitute them for ASA ratings. This is something every photographer should do whether he uses but one camera or depends on a dozen different cameras and meters.

One performance factor is mandatory for any camera or meter. It must function with absolute consistency. It should read the same light level with identically repeatable results. It should also be linearly consistent. That is, its sensitivity should not be affected by either high or low light levels.

If your camera meter or handheld

meter is consistent and reliably so at all light levels, then a simple test procedure can eliminate many of the variables. The exposure principle for black-and-white and color is different, so you will want to test each if you use both. You will also want to test each kind or brand of either black-and-white or color film if you use more than one.

First choose a subject that is typical of what you usually photograph and try to include a fairly equal distribution of light and dark tones. The lighting conditions should also be typical as to brightness, contrast and angle of incidence. Then choose a subject to test at each extreme of what you would photograph most often, from bright and low contrast to dark and contrasty.

SAMPLE INDIVIDUAL E.I. CHART				
CAMERA, BRAND X				
FILM	ASA	NORMAL E.I.	CONTRAST LO	HI
COLOR BRAND A	25	32	25	40
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METER, BRAND Z				
FILM	ASA	NORMAL E.I.	CONTRAST LO	HI
COLOR BRAND A	25	40	40	40
COLOR BRAND B	100	160	160	160
COLOR BRAND D	64	80	80	80
B & W BRAND C	125	80	80	80
B & W BRAND E	400	250	250	250

Photograph each scene, keeping precise notes to record the exposure for each frame of film. Note what the meter indication is for each scene. Expose one frame at that setting, then expose a frame for each $\frac{1}{2}$ f-stop increment for two f-stops over and under the indicated setting. Do this for each camera, each meter and every film you use, keeping exact records of each exposure of each frame by number.

When you get the color film back from processing, check the numbers on the slide mounts against the frame numbers by removing the mount from one slide. Lay out all the slides together in order. Then pick the one slide from each series of bracketed exposures that you find the most pleasing as to density level and color saturation. Check each of the slides chosen against your notes on exposure.

If the chosen slide was exposed at the setting indicated by the camera or me-

ter, then no adjustment is needed. You can set that camera at the ASA recommended by the film manufacturer. If the exposure for the slide chosen was below or above the indicated setting, then your exposure index should be adjusted. If the exposure was $\frac{1}{2}$ of an f-stop under the indicated setting, then increase the exposure index by two steps. For example, when the ASA rating is 25, then your individual exposure index for that camera and film combination would be 40. Each $\frac{1}{2}$ f-stop change represents one step of normal ASA speeds. Then make a list of all the adjustments for each camera, meter and film for normal scenes as well as the two extremes for which you tested.

Black-and-white is somewhat more complex because a development variable is involved. The principle for optimum exposure for a proper negative is to expose for the shadows and then develop for the highlights. If your current development practices allow you to make the bulk of your prints on contrast grade No. 2 paper, then use that time and temperature to process the exposure test film.

Study your test negatives after development to choose those with the lowest overall density that still preserve detail in the important shadow areas. Identify all of the test variables—film brand, camera, meter, normal scene, extreme scenes. Note the variations as you did with the color slides.

Make prints on contrast grade No. 2 paper of the negatives from the normal scene exposure test to check contrast for proper development level. If the prints seem too contrasty, lack sufficient detail in highlights and shadows or are too flat and gray looking, then repeat your exposure test of the normal scene. Adjust the development up for more contrast, down for less. Recheck overall density levels against the previous test negative, as there may be either a gain or loss due to the change in development, requiring an additional correction of the exposure index.

The results of your testing and evaluation should be recorded in chart form. Make your chart compact, easy to refer to and easy to carry. It should provide you with the adjusted exposure indices for each meter and camera for each film you use under a variety of conditions. Your chart will reduce the number of variables you have to work with, but it will not dispense with the most crucial variable—your ability to judge a scene, to previsualize the resulting photograph. □

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every job from photomicrography to astrophotography makes the FTb a camera a novice can grow with—or a pro can stick with.

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The Kodak gallery.



1.

2.



3.



4.



Combine the right imagination and skills with one or more of the many types of Kodak film, and the results can be as varied as Americana. Four examples:

1. "Long Forgotten," by Gene Allebach of Tiffin, Ohio. Outdoor scene shot on Kodak Ektachrome-X film and projected on a rear screen. Window frame and projected image shot on Kodak high speed Ektachrome film. 2. "The White Church," by Everett S. Wilson of Meriden, Conn. Final slide a result of using Kodak Ektachrome film, Kodalith ortho film, type 3, and opaquing. 3. "Going Visiting," by Frank Horton of Hickory, N.C. A result of an artistic viewpoint and Kodachrome 25 film. 4. "Plowing," by Gerald Dodds of State College, Pa. A mood portrayed on Kodak Ektachrome film.



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